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# FOOD VALUES IN PRACTICE





# FOOD VALUES IN PRACTICE

SIMPLE GUIDANCE IN DIET PLANNING AND COOKERY

BY

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TO  
THE MEMORY OF  
MISS G. M. GREEN  
WHO WORKED JOINTLY WITH THE AUTHOR IN THE  
EARLY STAGES OF THIS BOOK AND  
THROUGHOUT HAS BEEN ITS  
INSPIRATION



## PREFACE

By HENRY R. KENWOOD, C.M.G., M.B., F.R.S.E.,  
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Health in the University of London.*

THIS book deals with a subject of prime importance to the public, and it is written by one who is exceptionally well qualified by her knowledge and experience to offer sound practical advice thereon. Therefore it should fulfil a valuable public mission.

No one possessing even an elementary knowledge of human physiology will dispute the essential value of suitable and sufficient food, and no student of social conditions will question the need for a better general knowledge of the important facts bearing upon this subject. Very often indeed, a poor choice of food is made, especially by those who have to cater with light purses; and very often the nutritive properties of good food are impaired, and the enjoyment of eating is much discounted, by improper cooking.

The difficulties in the way of securing satisfactory nutrition are not slight. The cost of food is high in relation to the income of very many, and the need for some essential elements of food—elements which though minute in themselves (such as vitamins) determine big issues in nutrition—is not nowadays

so easily met as formerly. A feature of our modern civilisation is the increasing "urbanisation" of the population. This tendency to herd together into large communities is taking us farther and farther from our home-produced supply of fresh food, without which our diet is deficient in these essential elements ; and there is no lack of evidence that many are paying the penalty for the increasing staleness of our food supply. The informed person, guided by care as well as knowledge, can guard against these risks, at little cost.

The problem of suitable feeding is the people's problem. It is they and theirs who will suffer by neglecting it. As a student and worker in Hygiene for many years, and as one who has been in close touch, as a Medical Officer of Health, with people of all classes and knows something of their domestic circumstances and needs, I am satisfied that the relatively well-to-do and the very poor alike have much to learn in respect to what food to buy and how to make the most of their purchases. To cater and cook as "mother" did, will often not suffice nowadays; for in some important respects the food itself has changed, and often also our habits. Generally speaking, these changes are not to our advantage from the standpoint of good nutrition and sound health, and these facts need to be taken into account.

The food given may be inadequate in quantity or quality, or both. Happily it is comparatively seldom that hunger goes unsatisfied ; but it often happens

that the bodily needs of *nutrition* are not met, and poor development and ill-health result. The food, therefore, must satisfy more than appetite; and a careful planning, selection, and apportioning are essential to success. This successful rationing, or suitable feeding, demands the knowledge which can be gathered from this book.

Some may feel the need for guidance with regard to the lines upon which economy in food may be practised without loss to health and efficiency. For those who do hard physical work and for growing children and young adults the food-supply must be generous always, and no retrenchment in its quantity is possible among the poor; but often even the poor can economise by the replacement of dearer kinds of food by cheaper without suffering a loss in food-values, and by reducing that waste which results from unwise purchases and failures to make the most of that which is purchased.

By wisdom and care in the matter of food, ill-health and poor development, and therefore reduced happiness and efficiency, can be guarded against and money saved. Therefore the wise housewife will not fail to profit from the teachings of this small work; for she will apply its teachings with results which will amply repay her. The teaching is scientifically sound and essentially practical, and I hope that the book will be extensively studied.

HENRY KENWOOD.

July 1929.





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LONDON,

*September 1929.*



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# CONTENTS

	PAGE
PREFACE . . . . .	vii
ACKNOWLEDGMENTS . . . . .	xi
BOOKS FOR REFERENCE . . . . .	xiii
CONTENTS . . . . .	xv

## PART I

	AUTHOR'S PREFACE . . . . .	3
CHAPTER	I. THE KITCHEN . . . . .	5
	II. FUEL AND STOVES . . . . .	8
	III. FOODS AND FOOD-STUFFS : CLASSIFICATION . . . . .	14
	IV. FOOD-STUFFS : THE PLEA FOR A MIXED DIET . . . . .	18
	V. THE BODY'S USE OF FOOD. . . . .	45
	VI. DIET-SHEETS . . . . .	49
	VII. HOUSEHOLD BUDGETS . . . . .	63
	VIII. STORAGE . . . . .	70
	IX. MARKETING . . . . .	79
	X. FOOD-STUFFS AND COOKERY . . . . .	89
	XI. SOME WAYS OF COOKING . . . . .	96

## PART II

	PAGE
INTRODUCTION . . . . .	123
SELECTED RECIPES . . . . .	127
CHAPTER	
I. FOR THE NORMAL HOUSEHOLD . . . . .	127.
II. FOR FEVERS AND CONVALESCENCE . . . . .	156
III. FOR CONSTIPATION . . . . .	173
IV. FOR OBESITY . . . . .	183
V. FOR THINNESS . . . . .	188
VI. FOR CHILDHOOD, ADOLESCENCE, OLD AGE, MOTHERHOOD . . . . .	206
VII. VEGETARIAN DISHES . . . . .	211
VIII. INVALID BEVERAGES . . . . .	223
INDEX . . . . .	229

## PART I





## AUTHOR'S PREFACE

EVERYONE now admits that food given and taken under proper conditions is one of the chief sources of well-being to the human body, and, in fact, to the whole human personality. The work of recent years has shown ever more clearly what we owe to it as a preventive and a healer of disease. During the War we suffered cruelly, in common with other nations, from what were called "deficiency diseases," because it was not easy to obtain our usual foods, and this evil became so insistent that both in the war-zones and at home many scientists began to give their best energies to a study of the problem, with the result that the whole civilised world is more interested to-day in the laws of feeding than it has ever been before.

In the past we have perhaps been too much taken up with the cure for illness. Now from all sides comes the urgent call for prevention, and in this work our greatest aids are pure food and water, sunlight and pure air, healthy exercise and occupation, and these go further than one sometimes thinks towards ensuring purity of thought, feeling, and action. A well-known writer has said that diet should be the basis of every medical study: it is the ABC of medicine. At any rate we shall choose to pay the doctor—and nurse—to keep us well rather than to cure our ills.

"One man's meat," says the proverb, "is another man's poison," and it is indeed most necessary for us to understand what is the fitting meat for all and

each. Further we must admit the importance of the preparation of foods for human consumption in health and sickness, and this brings us directly to the subject of cookery and other matters closely connected with it.

It will be impossible to go very fully into the laws of feeding, and much will necessarily be assumed as we begin to consider the practical application of scientific principles, but it is our hope that these assumptions will agree with the abundant investigation of the present day and will stand the further test, perhaps still more useful, of the practical experience of our readers.

## CHAPTER I

### THE KITCHEN

THE housewife always knows what kind of kitchen she wants, although, alas! it is often impossible for her to have it just as she would choose. Naturally its size and furnishing will vary according to means and the special needs of the family party.

If it is an ideal room it will be light and airy without being draughty. Dark and airless places favour dust and dirt and the growth of microbes, and they depress and hinder those who work in them.

Cleanliness of the person, the surroundings, and all furniture and utensils is very important in a kitchen, but on that matter we cannot at this point consider details. It is a great help, however, to have a plentiful supply of hot water, and this is now as a rule quite possible with moderate expense.

Every housewife will have an eye for roomy and suitable cupboards and drawers, and will see that her kitchen has the necessary shelves, plate-rack, a good gas-stove (if possible), a coal-range or other means of heating water, a good-sized strong plain table and perhaps a hinged table as well, and, at least, one chair. If the kitchen is also a living-room, then it should be made as comfortable as possible and should have an easy chair, but all overcrowding should be avoided.

A sink is useful, even if there is a scullery near at hand, and this sink as well as the tables and the stove should be in a good light, coming preferably from the

left. The cupboards, especially the one for stores, should be built into or placed against an inside wall. This is not so necessary for the china cupboard.

In choosing a floor covering, the chief points are that it should be durable, easy to wash or cleanse, sufficiently warm to the feet, and of such a substance that it cannot cause tripping or be easily kicked up.

It is not good to have multitudes of utensils. We need just a useful number of bowls, dishes, plates, jars, jugs, and other crockery, both for cooking and serving, so that we may never be at a loss, yet at the same time the cupboards may never be overcrowded. The same may be said of cutlery and the different kinds of kettle, saucepan, steamer, casserole, and other utensils such as may be seen in good shops and at exhibitions. It is well always to have a stock of newspaper in the kitchen, as this is most useful for protecting the tables, for wiping off some of the grease from saucepans, dishes, plates, etc., for rubbing up the stoves, and in many other ways. Clean paper bags and greaseproof paper, saved from our ordinary parcels, are also most useful and can be kept ready to hand in some special place. We need a few clean pudding-cloths for use in the steamer and we should do well to have kitchen scissors and a string-bag.

Care of the kitchen is of little avail if we neglect the larder, for here the fortunes of cookery are often made or marred. It should be conveniently near the kitchen and should be light, airy, and absolutely clean. It should be on the north or north-east side of the building, where the sunlight cannot beat upon its window. The outer air must not be spoilt through the nearness of a dust-bin, a coal-house, a water-closet, or anything else which might make it impure.

It should enter the larder through ventilating bricks and a window wholly or partly filled in with perforated zinc. A wide low shelf of slate or stone is most useful, and there should be other shelves too. Here, as in the kitchen, crowding must be avoided, and every day the larder must be carefully inspected. Raw and cooked meat as well as milk should be suitably covered, and the door should always be kept shut against enterprising flies. In these ways we shall do much to discourage the growth of harmful microbes and moulds which thrive in damp, dark, airless places.

If a separate larder is quite impossible, much may be done with a good home-made safe or a ventilated cupboard if the points given above are well noted. For instance, it might be possible to fix up a safe in a good position outside the house. If it is in the kitchen or if a cupboard is used, it is necessary to choose a position as far as possible from the fire and well supplied with fresh air.

Sometimes there will be the advantage of a scullery adjoining the kitchen, which will provide the sink and draining-board for the more serious part of the washing-up, and a temporary resting-place for refuse and perhaps accommodation for the larger, heavier, and more bulky utensils and apparatus. Here also it will be possible to prepare vegetables and some kinds of fruit.

Details of this subject will be taken up again when we come to deal with storage.

## CHAPTER II

### FUEL AND STOVES

Our fuel is commonly chosen from the following four kinds, viz. coal, gas, oil, and electricity. Of these, coal has been up to the present the most common and naturally the most available, although the use of gas has advanced by leaps and bounds, so that it has become a formidable rival to coal. Oil, as we shall see, is much more restricted, and electricity at present is reserved for the select few. There are, however, many good arguments for its growing use and many indications that the supply for domestic purposes may become much cheaper in the near future.

In discussing the advantages of each kind, the disadvantages will also be clearly revealed. Coal is accessible for practically every home in a British town, except during a strike, and, because this is so, anyone setting out to cook finds that custom has provided her with the necessary grates, ranges, cellars, etc. A coal fire helps greatly in ventilation and is undoubtedly cheerful in use. A coal range, beyond its first purpose, is also useful for heating a room and for supplying hot water. It can be used for drying and airing clothes and for burning refuse, and, lastly, the chances of failure in supply and efficiency are small.

Gas is generally accessible, at least in towns, and much is being done to increase its usefulness. It is easy to control and on the whole it can be more economical than coal. In use it is much cleaner and

much cooler and is ready at any moment to be brought into action. Altogether it makes possible much saving of labour, and for all these reasons it is to be recommended, in spite of the slight danger of explosion and the greater need for ventilation.

Oil has fewer and less varied advantages than coal and gas, but it can be of great benefit as a stand-by when for any reason other fuel is lacking. For instance, we are glad of it when gas is impossible and coal is scarce and dear, as often in country districts and in places abroad. Often in times of emergency it has been a great boon, as during a strike or a war. Then, also, because it is portable and reliable in use it becomes invaluable for caravanning or camping out, or even in a one-room dwelling. Lastly, although it does not as a rule provide a means of quick cookery, it has the undoubted advantage of cheapness. It is, in fact, fairly difficult to be extravagant with oil unless wantonly so.

Electricity has most of the advantages of gas and in greater degree, but its use for cookery in homes of very moderate means is at present hardly practicable.

As for the results of cookery with these kinds of fuel, we may say that the expert is able to do excellent work with each and all, though naturally there are restrictions in the matter of oil. It is difficult to make exact comparisons in cost, because of constant fluctuation. As a rule variations in one kind are almost inevitably followed by variations in the others.

Stoves in these days are endless in number and variety, but in discussing a few common types we shall follow the order already chosen in dealing with kinds of fuel.

With coal as fuel, the open fireplace, in no sense



ideal, is sometimes the only means available for cooking, and the cook must make the best of it. To her aid she may call in the use of trivets of various kinds, and iron stands which can be put actually into the fire over the coals. She can buy hearth-stands both useful and ornamental, and, best of all, she can revive the use of the little old comfortable dutch oven with reversible back. Good ones can be bought quite cheaply and can be used for bacon, chops, kidneys, steak, fish, cheese, toast, tomatoes, apples, etc.

It is hardly necessary to say here that extreme care is needed in the management of fuel and utensils if an open fireplace must be used. Cleanliness of utensils is very important: a charred, clogged, smoky saucepan needs more heat and has a shorter life than a clean one; it tends to burn what is cooked in it, and in other ways spoils the natural flavours of food.

As a rule a closed range of some kind is available. If the cook has the power of choice the great point is to select a thoroughly good well-tested type by a thoroughly good firm. She will need a range which is suitable to the size of her kitchen and which will do the greatest amount of good work with the least possible labour and cost.

Still considering the use of coal, we note that at the present day there are very many substitutes or compromises for the kitchen range. One of these has a small open fireplace, but hides a good-sized oven and a heating-chamber behind tiled doors, and is also supplied with a boiler for hot water.

Turning now to the use of gas as fuel we may note a great variety of apparatus, e.g.:

A single ring with adjustment and tubing but no other appliances.

This is used by an astonishing number of people in these days and has wonderful possibilities, especially in the method known as<sup>1</sup> "one-pot-cooking." For this a number of stone jars containing different foods are covered with caps of greased paper and being thus water-tight and protected can be subjected to steam in a single large saucepan half filled with boiling water. This method can also be used with an oil-stove.

To the single ring may be added a toaster, and with these two things many a meal, suitable in health or sickness, may easily be prepared.

If the cook wishes to use at least two vessels and has only one ring she may employ a gas-economiser or heat-distributor, in which the main idea is a sheet of metal on low supports generally with one or two holes for saucepans. Underneath one part of this contrivance stands the lighted gas-ring which can be moved from side to side as it is needed. There are many good examples of the economiser, but a very simple and quite effective device is the use of an inverted baking-tin, suitably supported on fireproof bricks.

So far we have confined ourselves to the processes of steaming, boiling, stewing, and frying. If we wish to bake we can use one of the many small ovens which are now in the market (e.g. one supplied by the makers of oil-stoves). With a gas-ring we need some form of stand with bars so that the oven shall not be too near the naked flame. This also is easily obtained, and our chief care will now be to steady the oven and regulate the heat.

Instead of the devices already mentioned we may have a rigid tube with offshoots which supply gas to a

<sup>1</sup> See Part I, Chap. XI.

griller and one or two small rings, the whole contrivance resembling the top of a small gas-stove. This can readily be used on a table or bench or low shelf, but should then rest upon a sheet of pure asbestos.

Again, there are numerous patented stoves, with small ovens, supplied with one detachable gas-ring which can be used separately when so required. Another variety has one adjustable burner usually in the form of a bar which can be raised or lowered at will. Many of these stoves are light enough to be moved about by one person, and can be set on the floor or raised on a low stand.

We now come to the gas-stove proper, the types of which are far too numerous to mention. Gas companies of importance as a rule have their own particular patterns, and there are multitudes besides in which improvements are constantly being made. One modern development is a stove with a top similar to the hob of a coal range with movable plates above the gas jets. Such a surface economises heat and avoids the difficulty of balancing saucepans, etc., on awkward bars—a difficulty which perhaps we have all known at times. Another modern stove is so planned that the oven can be heated by gas or by a coal fire, as the housewife chooses.

We must now glance at some of the apparatus designed for use with oil as fuel: first may be noted those small stoves, single or double, with simple straight wicks, easy to fill and clean and particularly safe if ordinary care is taken. Such stoves are by no means new, but they became especially familiar during the long coal strike of 1926. Little hobs or “extensions” can be hinged on and used with them, and a small oven is made which can be fixed on the top of

the stove. A recent improvement is known as the "blue flame" stove, which, being better supplied with air, is able to give out a greater heat. More elaborate oil-stoves with larger ovens and usually with circular lamps are of course able to give better results, but the outlay and working expenses are naturally greater.

Small electric cooking stoves are even now in use in some houses and flats built for artisans, but they are still for the most part a bright dream of the future.

## CHAPTER III

### FOODS AND FOOD-STUFFS : CLASSIFICATION

THE tissues of a living human body are built up of certain substances which are continually wearing away and need renewal. This is effected by the vital energy of food and by the body's own power of making use of it for all its varied activities. Tissues of plants are to some extent made up of the same substances, and food is equally necessary to their life, but they can use as food certain materials which would prove valueless in higher stages of life. Green plants live on the more simple things which they take directly from air, water, and soil, and which through the magic of sunlight they are able to change and use. Animals in general cannot do this except as regards water ; they can use as food only those materials which have already been changed by the work of plants. They are able, however, in building up their tissues and carrying out the purposes of their lives to make use of many plants which human beings cannot directly use. So it comes about that human beings, who gather into themselves so much of the nature of mineral, plant, and animal life, depend for their very existence on the energies of these lower forms, and in this and other ways are bound to them by the closest ties.

It is possible to live entirely on animal or on vegetable diet, but it has been a general human tendency to choose a mixed diet, and most human beings thrive

best when so nurtured for reasons which we shall hope to make clear.

A classification of food-stuffs will help us to see how the different kinds occur in our daily foods :

Organic	{	Nitrogenous	Proteins
		Non-nitrogenous	{ Fats Carbohydrates Roughage Extractives <sup>1</sup> Organic Acids Vitamins
Inorganic	{ Mineral Salts Water		

These food-stuffs are necessary to the life of mankind and are supplied in varying ways by common foods.

A food must have within itself the virtue of doing any one (or more) of the following services :

1. To build up the living tissue, i.e. to make bone, flesh, muscle, nerves, blood, or any other part of the marvellous structure.
2. To repair the fabric as it wears out.
3. To give heat and nervous and muscular energy or to serve as a source of stored energy.
4. To lubricate and keep the organs in working order.
5. To make and keep the blood pure.
6. To replace the water lost by evaporation, etc., and to aid in the making of body fluids.
7. To control the whole output of energy.

<sup>1</sup> These contain much organic material.

The way in which this varying work is done can be seen in the following table :

<i>Food-stuff.</i>	<i>Use in the Body.</i>	<i>Source.</i>
Protein.	To build and repair. To give heat and energy.	Beef, mutton, pork, rabbit, poultry, game, fish. Milk, cheese, eggs. Wheat, oatmeal, etc. Peas, beans, lentils.
Fat	To give heat and energy. To lubricate.	Fat of meat, fish, etc. Milk, cream, cheese, eggs. Butter, lard, dripping, margarine, etc. Vegetable oils.
Carbohydrate	To give heat and energy.	Sugar. Wheat, maize, rice, etc. Most vegetables. Most fruits.
Roughage	To keep the bowels healthy.	Cereals, pulses, fruits, vegetables.
Extractives	To stimulate appetite and the nervous system generally.	Meat, fish, milk.
Organic Acids	To purify the blood.	Fruits, vegetables.
Vitamins	To control energy and ensure general welfare.	Numerous common foods.
Mineral Salts	To purify the blood. To help in making bone, teeth, etc.	Water and most foods, especially fruits and vegetables.
Water	To replace what is lost. To carry food-substances, etc. To make body fluids.	

Many substances which are not usually called foods are yet of great value in the dietary. Such are tea, coffee, clear soups, meat extracts, etc. Seasonings,

again, are not essential, but, taken sparingly, they aid digestion because they bring out flavours and so make food more attractive.

Summing up these points, we note that the human body's chief needs as food are the following : Protein, Fat, Carbohydrate, Mineral Salts, Water, Roughage, and Vitamins. These seven we shall now consider.



## CHAPTER IV

### FOOD-STUFFS: THE PLEA FOR A MIXED DIET

#### PROTEIN

IN view of what has been said of the way in which foods are called into being we shall not be surprised to learn that the nature of food-stuffs is by no means simple. Protein enters into every part of every human, every animal body, and is found in greater or less degree in most common foods. There are innumerable kinds, and each type of animal and plant needs its own kind. It may even be that each cell, whether animal or vegetable, needs its own special kind.

The chemist has found that proteins are built up of fragments called amino-acids, which have been likened to building-stones or the tiny separate stones of a mosaic. It is possible that the variations in proteins are due to differences in the number, proportions, and arrangement of the fragments which they contain, and there is in life undoubtedly some mysterious force which determines this choice and arrangement and fits them to the peculiar needs of man, animal, and plant.

The first and paramount use of protein is to make new tissue and to repair the worn parts. It is therefore necessary for all living beings, but especially for young growing things, for expectant and nursing mothers, and for those whose tissues for any reason have been unduly impaired; it becomes a less vital need to those for whom body-building is over.

Protein is also able to provide heat and energy, and tends to do this more than is fitting unless we supply in due measure the "protein-sparers," which we shall describe later.

Again, protein seems to have the power of increasing the body's ability to make use of food-stuffs generally. It is possible to call this power to our aid : it is also possible to abuse it, as sometimes happens in such maladies as obesity and diabetes.

Protein, especially animal protein, further seems to have a striking effect on nervous force and the power of putting forth nervous energy. It therefore has an important bearing on the ability to meet the accidents and emergencies of life, to resist disease-germs, and to make up for the ravages of sickness. Dr. Robert Hutchison,<sup>1</sup> writing on this matter says, " If protein food, therefore, be regarded as a nervous food, a diet rich in it will make for intellectual capacity and bodily energy, and it is not without reason that the more energetic races of the world have been meat-eaters." Can we go a little further and say that an overdose of protein may partly account for the excessive nervous energy which is so evident in the strain and stress of modern life ?

Protein is found in its most concentrated form in lean meat, where it is known as Myosin. Fish is another valuable source of protein, though it does not yield it so abundantly as lean meat.

The protein of cow's milk is mainly Casein, with some Lactalbumin, that of human milk mainly Lactalbumin with some Casein. It is a significant fact that an animal protein serves as the only source for babies and young mammals in the earliest stages.

<sup>1</sup> *Food and the Principles of Dietetics*, p. 174.

Recent study suggests that the protein of a woman's milk is of far greater value to the infant body than that of cow's milk.

Cheese, as we should expect, has a good supply of protein, and butter has a very small amount, which perhaps helps to account for its not keeping so well as some other fats which have no protein.

White of egg is mainly protein and water, and of the former the greater part is known as Egg Albumin. Yolk of egg is also rich in protein (mainly Vitellin and Nuclein).

The protein of wheat and some other cereals is known as Gluten, which gives flour its familiar stickiness when blended with water and makes it suitable for bread-making. That of maize is called Zein and is lacking in certain very important amino-acids.

Peas, beans, and lentils are another valuable source, especially to the vegetarian. In these the protein is known as Legumin.

Fierce fighting rages round the choice of protein. From the point of view of mere physiology there is an enormously strong argument for cannibalism. It cannot be denied that the human body gets its necessary protein with least waste from a protein of similar constitution. Since, however, from all other points of view cannibalism is out of the question, the only reasonable alternative seems to be that we should mix our proteins in such a way that a defect in one may be fully corrected.

The value of a protein as a food depends upon its power to restore or to save the nitrogen of blood and tissue in the organism. It may therefore have different values according to the type of organism

using it. This power is termed "biological value," and, as we have hinted, it is greatest when the protein supplied can be broken up into those amino-acids which can, with the least possible amount of waste, correspond in number, variety, and arrangement with those of the organism receiving it.

Thus, the biological value of wheat protein is said to be 39, because it would take 100 grams of the nitrogen existing in this protein to replace 39 grams of body nitrogen. It is often possible to mix proteins in such a way that the very amino-acids missing in one may be well supplied in another and by this means the biological value may be greatly improved, e.g. "The biological value of gelatin is zero, that of wheat protein 39, but the combination of gelatin and wheat might have a biological value of 50."<sup>1</sup> Herein lies a good argument for the use of veal broth with bread, and taking an illustration from common affairs one might say that this interaction is something like the help which a good accountant might give to a dreamy tradesman. It is, in fact, an illustration of the truth that a whole may sometimes be greater than the sum of its parts.

The protein ration will be treated more fully in a later chapter, but we need here to look into a few general principles. Protein, unlike fat and carbohydrate, cannot be stored at all in the body unless it actually becomes a part of some tissue or of the blood. Any surplus passes away as waste, together with that which the body has used and no longer needs. This fact is known by physiologists under the term "nitrogenous equilibrium," since nitrogen is the most important constituent of all forms of protein. Experiment has shown conclusively that if the normal

<sup>1</sup> V. H. Mottram : *Food and the Family*, p. 66.

protein intake is increased, nitrogenous waste is correspondingly increased, and conversely, if the intake is decreased, nitrogenous waste to a certain limit is also decreased. If, however, no protein is given in the food some of that belonging to the body substance is actually called upon to supply the lack, and after a short time is excreted as nitrogenous waste.

Owing to the difficulty and expense of obtaining protein and, in part, to certain disadvantages in the use of this food-stuff, it has in the past been a common aim to find the least possible amount which will keep the body in healthy activity, and at the present time there are those, notably Chittenden, who advocate this. On the other hand, many dietitians consider this an unwise plan and seek rather to fix the protein optimum, urging especially the need for a "margin of safety" and the importance of a liberal supply during periods of rapid growth. This is the stand which we shall take in the discussion which follows.

Gelatin is so nearly allied to protein that by some it is actually regarded as one of its forms. It lacks, however, two out of the six amino-acids most important to life (tyrosine and tryptophane) and therefore is not capable of building any kind of tissue. It can, however, take the place of protein more readily than anything else in supplying heat and energy, and is therefore an important protein-sparer. Moreover, as we saw before, it can, owing to its nearness to protein, give good biological value if skilfully combined with other things. Gelatin is derived mainly from connective tissues of animal bodies and from bone and gristle. Yet it cannot build up even the connective tissue of the human body.

## FAT

While protein is absolutely essential to life, and human life can on occasion be extended indefinitely if protein, water, and mineral salts are supplied, fat, although of great value, is not a necessity since it can, if need be, be manufactured out of protein. It is a substance familiar to everybody and is a compound of glycerine—for which there is no other source—and fatty acids. It is built up in plant life and is present in some degree in almost all foods, sugar and starches being exceptions and olive oil a notable illustration. Although it is so prevalent in vegetable life, the average human being gets his supply mainly from animals, even the vegetarian commonly allowing himself such things as milk, butter, cream, cheese, and eggs, all of which are important sources.

Fat is first of all useful as a protein-sparer. Weight for weight it is able to give more than twice as many units of heat or energy as either protein or carbohydrate. As a heat-producing food it is therefore particularly valuable, which perhaps partly accounts for its use by such races as the Esquimaux and for its helping to counteract chilblains. It is, however, absorbed but slowly, and for this reason is better as a supply spread over lengthened periods rather than for sudden output.

Fat delays digestion in the stomach and therefore helps to give the idea of staying power and sufficiency. It is useful in cases of undue gastric secretion and a hindrance when such secretion is diminished below the normal.

Animal fats, and perhaps vegetable in a less degree, hold in solution Vitamins A and D, the value and significance of which have so far been only partially

defined. Almost beyond a doubt fat has a good effect on the growth of young creatures and by Nature is abundantly supplied to them. It is conspicuous in human milk and that of other mammals, and is well supplied in yolk of egg, which provides food for the unhatched bird. We do well to note the ability of these young creatures to digest fat, and we should encourage in later stages what has been called the "fat habit." Again, almost beyond doubt, it increases the body's power of making use of lime and thus helps in bone-formation. In this respect diet aided by sunlight can do much.

Fat also seems to be an exceptionally good brain and nerve food and has been found to improve the body's resistance to infection, especially that of tuberculosis.

Fat encourages the healthy working of the bowel by protecting it against what might otherwise be an irritating effect of carbohydrate. It thus assists the body's power of making use of carbohydrate. It is quite probable that the fat normally excreted has been used to this end, and in the infant at any rate the presence of fat compensates for the lack of roughage and helps to give healthy stools.

Fat, unlike protein, can be stored against emergencies. Any surplus above what is needed for the working of the body takes its place in the fatty tissues. This happens more than is fitting in obesity, which as a rule is due to the supply of food being in excess of growth and output of energy. A certain share of this fatty tissue seems to accompany the possession of red healthy blood and to be a condition of satisfactory nutrition. Of all tissues it is the kind most easily lost and is sometimes very difficult to regain.

Animal fat is best known in such common foods as

butcher's meat, poultry, game, rabbit, bacon, ham, fish, egg-yolk, lard, dripping, milk, cream, butter, and cheese. All these, except lard, are rich in Vitamins A and D. As regards fish, the fat is mainly restricted to the liver except in the class of oily fish, such as herring, pilchard, mackerel, eel.

There is a good deal of evidence to support the common idea that the human body can have in its own tissues "good" fat and "bad" fat. This is at least true of the fatty tissues of animals, as Weir Mitchell points out in his book *Fat and Blood*. His argument there is that the goodness and stability of human fatty tissues depend in part on the kind of fat supplied to them.

Vegetable fat is found in abundance in some nuts, especially the almond, coconut, and brazil nut. Also abundantly it is found in the olive, linseed, and cotton seed. Certain artificial products again are important sources of animal or vegetable fat, e.g. chocolate, toffee, margarine, virol, etc.

It is now fairly well agreed that while animal fat is more valuable for growth and resisting power, vegetable fat has equal value with animal in the business of supplying body fuel. A mineral oil such as petroleum, although not absorbed into the blood, can yet be useful as a lubricant, and in such a malady as diabetes it has value because it does not give calories.

From what has been said it is clear that we must not allow the fat ration to sink too low, especially during periods of rapid growth or of severe mental and bodily strain. The body can in general be trained to deal with a large amount of fat, as is clearly seen in the dietetic treatment of hyperacidity, tuberculosis, and diabetes. For children, at any rate, it is well to aim



at giving about equal parts by weight of protein and fat, and this means that the fat calories are considerably more than twice the number of those supplied by protein. An excess of fat must, however, be avoided, as it sometimes has very serious results.

### CARBOHYDRATE

This food-stuff, like protein and fat, is built up in the first instance by means of plant life, but, unlike protein, it is for the most part found only there, milk being the chief exception to this rule. As in the case of fat, although it is not absolutely essential to supply it, yet the body has need of it and can, and does, manufacture it out of protein if it cannot be obtained in any other way. This sometimes happens even though the body may be unable to assimilate it, as in diabetes.

The first use of carbohydrate is that it spares protein by supplying heat and energy and does this more economically than fat, although weight for weight it cannot supply calories so abundantly. It can be absorbed more quickly and easily than fat, and therefore is more useful when a sudden demand is to be met.

The interdependence of fat and carbohydrate is very close, for, just as fat aids the assimilation of carbohydrate, carbohydrate in its turn makes possible the assimilation of fat and helps to prevent an excess of the latter. This is well illustrated in the modern use of insulin, one unit of which makes possible the assimilation of 1 to 2 grams additional carbohydrate and with it 3 to 4 times that amount of fat.

Carbohydrate is especially useful for muscular activity and can be assimilated in large quantities by those who habitually have hard muscular work in the open air. This has a bearing upon the fact that

vegetarianism as a rule is more successful with such people than with sedentary workers.

A very valuable point in carbohydrate is its cheapness. As we have seen, it is economical in use and comparatively easy and cheap to get, owing to the fact that in general Nature supplies it directly through plant life. It is also transported and stored with ease.

Carbohydrate is often found in close association with Vitamins B and C, as in whole grains and many fruits and vegetables. More will be said on this point in the section on Vitamins.

Carbohydrate, like fat, can be stored in various parts of the body or can be converted into fat and take a place in the fatty tissues, to be used later as a source of heat or energy.

Carbohydrates fall into two main groups known to us as Starches and Sugars. Starch highly magnified is found to be in the form of granules, each of which has a covering of a tough substance known as cellulose. It is probable that we do not in starches get as wide a variety as in the case of proteins, or, in other words, the building-stones are fewer in number although they are at the same time built up into very complex forms.

Starch is found in the storage parts of plants, i.e. in grains, seeds, roots, tubers, stems. The most important starch foods therefore are : Wheat and wheat products, oats, barley, maize, rice, and rye. These are collectively known as cereals. Associated with them are tapioca, sago, and arrowroot, which are not actually cereals. Then we have the common pulses, such as peas, beans, and lentils ; the pea-nut is also a pulse, though common usage tends to class it as a nut. Examples of tubers are the potato and the Jerusalem

artichoke ; roots rich in starch are the turnip, swede, parsnip, carrot, radish, while for stems we might mention celery and sea-kale.

Of the cereals used in England wheat is by far the most important. The outer covering of the grain gives us bran, which, though not often used for human food, is valuable for some animals and for certain processes in laundry-work. The inner lining is made use of in wholemeal flour, which should also include the germ, while for white flour the inner part alone is used.

Macaroni is generally made from Italian or French flour, which has a higher percentage of protein than our own. This is also true of spaghetti and vermicelli.

Semolina is obtained by the coarse milling and sifting of a red wheat grown in S. Europe and rich in nitrogenous matter.

Next to wheat would come oats and oaten products. The grain has a good share of both protein and fat and a larger amount of cellulose than wheat. It is valuable as a source of mineral matters, giving us calcium, iron, and phosphorus. We call to mind Dr. Johnson's verdict on the horses—and men—bred on oats, and when we remember what a splendid excuse they give for the use of milk we are not surprised that the Scotch peasantry of a past age thrived well on such fare. Oats in the husk are used as food for other animals besides horses, but never in human food. When the outer coat is removed and the grain is further milled we know it in the four stages of coarse, medium, fine, and patent oatmeal. Rolled oats (e.g. Quaker Oats, Provost Oats) are now to some extent taking the place of ground oats chiefly because of the easier and quicker cooking entailed.

Barley is much like wheat in composition, but has

rather less starch. When the husk has been removed and the grain roughly ground it is known as Scotch barley. Further milling gives us pearl barley, and a still finer grinding gives us barley-meal, which nowadays is not greatly used. Finally, as in the case of oats, we have the well-known patent barley.

Maize or "Indian corn" is used sometimes in this country as a vegetable. For this the very young tender grain is taken and tinned, and proves a sweet and juicy dish. We have also a maize semolina, which has a little more colour than that of wheat. This and maize flour we were urged to use during the War, but our English palates, it would seem, never took very kindly to them. As cornflour, however, we use maize largely, especially when we need a very high percentage of starch.

Rice is eaten a great deal in this country, though not grown here. Its starch is easy to digest and its protein, though small in amount, is of good quality. In addition to the grain we now have flaked, puffed, and ground rice, and the very finely ground rice flour. Rice starch is used in laundry-work because of all common cereals it has the smallest starch granule.

Rye is like wheat in having gluten and was formerly used in this country for the people's bread, wheaten bread being a great luxury. It is still so used in Europe, and the recently patented Swedish rye breads have met with much favour in England.

The following manufactured products are often wrongly classed as cereals :

Tapioca, made from the root of the South American cassava plant and known in this country in the varied forms of rough lump, bullet or pillule, seed, and grout. The last receives its name from its inventor,

a Frenchman, and is rather like semolina, but whiter. Its chief use is in the preparation of soups and puddings.

Sago, made from the pith of the sago palm and known in the bullet and seed varieties.

Arrowroot, made, as the name suggests, from the root of a plant grown in Bermuda. It has a very high percentage of starch, and pure arrowroot is fairly expensive.

Turning now to pulse-foods, we find a good percentage of both starch and protein. We know them as peas, beans, lentils, pea-nuts, etc., and because their protein is not good in biological value we combine them with other protein foods. The Soy (or Soya) bean has much more protein and fat and less starch than other pulses, and has of late been greatly used by scientists in dietetic experiments on animals. Lentils are easier to digest than the others. They have a high percentage of protein, especially Egyptian lentils.

Sugar, although showing much variety, is simpler than starch in chemical constitution, and it is interesting to note that all starches must ultimately be changed into a certain form of sugar before they can enter the blood and become of use to the body. Refined sugar has been called "the purest food-substance in commerce." It has very high nutritive value (116 Calories per oz.) and is so readily absorbed that it is regularly used by athletes, mountaineers, and others who are bound to put forth great muscular effort. A simple but convincing illustration of its food value is the effect of taking but a single lump when one is very hungry. Then also, even in these post-war days, sugar is comparatively cheap and can therefore be used without difficulty in all normal

diets. Our privations when it was scarce are too recent for us to have forgotten them.

We derive sugar almost wholly from vegetable sources, the one notable exception being that form found in milk. In plants it occurs as starch so changed that it can circulate through the tissues, so that here also there is an analogy between plant and animal life.

The most important kinds are :

1. Cane Sugar or Sucrose, found mainly in the sugar-cane.

2. Beet Sugar, which is now through commercial enterprise so largely taking the place of cane sugar. It is chemically identical with cane sugar and often included with it.

3. Milk Sugar or Lactose, which is specially abundant in human milk. It has the advantage of being almost tasteless, and for that reason may usefully be employed in invalid diets when a patient needing sugar turns away from sweetness.

4. Malt Sugar or Maltose, made from sprouted barley and much used in patent preparations.

5. Grape Sugar or Dextrose or Glucose, found in many fruits and clearly seen in their dried state (e.g. Valencia raisins).

6. Fruit Sugar or Lævulose, generally obtained as a syrup and hardly capable of forming crystals. It has been found to be more easily assimilable by diabetics than other forms.

7. Invert Sugar, which is a mixture of 5 and 6 and is well supplied in honey.

The normal adult diet naturally has a large proportion of carbohydrate, in fact about two-thirds by weight and sometimes even more. Of this, part is starch and

part sugar. The infant at first takes all its carbohydrate as milk sugar, if fed naturally. After the age of one year, at any rate, various forms of starch come to be used, but still the sugars form about half of the total carbohydrate. As the child grows older it is largely a matter of digestion whether starch or sugar shall preponderate. It is commonly thought that sugar especially has a bad effect on the teeth, but this is scarcely borne out by the general excellence of the teeth of negroes, who use the sugar-cane so extensively. In America the use of sugar has probably increased since prohibition, and the amount of sugar is equal to that of starch, which is perhaps excessive.

The evils of excess and of deficiency of carbohydrate may perhaps both be seen in diabetes. In other words, it may be that one of the causes of the disease is an undue demand on those cells of the pancreas which produce insulin and make possible the assimilation of carbohydrate. When, however, carbohydrate cannot be utilised the digestion of fat and even protein becomes defective and their waste products poison the system. Possibly, also, an excess of carbohydrate in general may have an influence on the condition of the teeth; again, it may lead to an undue retention of water in the tissues and almost certainly favours obesity and various digestive troubles. There is at present a tendency to give too much carbohydrate and too little protein and fat in childhood and adolescence.

### MINERAL SALTS<sup>1</sup>

Such salts are supplied by foods from both plant and animal life, spinach, milk, and beef being good examples.

<sup>1</sup> For details of the subject consult Mottram: *Food and the Family*.

In general their use is to aid in making bone and blood, but, as we shall see, they also have a most important connection with brain and nerve tissue, and it is probable that they play some part in determining output of energy.

In dietetics we are chiefly concerned with minerals containing the following elements: Calcium, Phosphorus, Iron, Magnesium, Sodium, Potassium, Chlorine, and Iodine.

*Calcium.* This is necessary in every part of the body, whether tissue, nerve, muscle, blood, or bony framework, and no bodily function is possible without it. The power of making use of it seems to be governed by those glands in the neck known as the parathyroid and embedded in the thyroid, and the well-being of these glands is in some way connected with sunlight on the one hand and the supply of fat on the other. The foods which best supply calcium are: Cheese, egg-yolk, milk, rice, oatmeal, cauliflower, celery, spinach, carrots, radishes, and some fruits. It is lacking in wheat, potatoes, oranges, tomatoes, full-grown meat, and fish. The value of hard waters for drinking cannot be ignored.

*Phosphorus*, although very poisonous in its native state, is found throughout the body. Salts formed from it (phosphates) are necessary to the living cells and to bone and tooth formation. With carbohydrate phosphorus seems to be involved in muscular action, and it is also important for nervous energy. It is present in many kinds of protein, while in association with fats there are found certain substances (e.g. Lecithin) which yield phosphorus in assimilable form. We get it most richly from animal foods, e.g. cheese, egg-yolk, milk, throat sweetbread (thymus), fish-roe,



calves' brains, but also from oatmeal, wholemeal, and green vegetables. Being so important as a building material it should always keep its place in the diet of the young.

*Iron* is needed to make red blood and is therefore an aid in supplying oxygen to the whole body. We have already noted how closely connected are good nutrition and the possession of rich red blood, and it is fairly well agreed that one form of anæmia (green sickness or chlorosis) is due to a deficiency of iron in the food ; certainly experiments on animals support this theory.

The amount of iron present in common foods fluctuates even more than in the case of other mineral matters. Meats from animals which have not been bled and vegetable products from soil well supplied with iron will give it best. The foods which are richest in iron are red meat, water-cress, dandelion leaves (for salad), egg-yolk, wholemeal, oatmeal, spinach, green peas. It is lacking in milk, white bread, and tomatoes. The regular supply of a little red meat for the toddler will, in this way and others, help to correct the tendency to give too much carbohydrate and too little protein at this stage.

Although diet is important in the supply of iron and the body gets this and other mineral matters best through its food, yet when once it has begun to suffer through a deficiency it is difficult to remedy the fault by diet alone, since no foods are rich enough in iron to supply the lack. Modern attempts to make use of hæmoglobin<sup>1</sup> are at a disadvantage in that iron in this form is very difficult to assimilate.

*Magnesium* occurs for the most part with calcium

<sup>1</sup> The red pigment of blood. See Mottram: *Food and the Family*, p. 80.

and in similar proportions, but there is less in milk, more in meat, and much more in white bread.

*Sodium* is needed by the body for its various fluids and is taken chiefly as sodium chloride or common salt. It is best supplied by animal foods, and is present in sufficient quantities in an ordinary mixed diet. There is much difference of opinion as to the harm resulting from an excess or lack of this salt. On the whole it seems fairly safe to assume that it tends to increase the supply of acid in the gastric juice, and that whereas additional salt is probably harmless in normal cases it is a hindrance in hyperacidity and a help where digestion is poor and gastric secretion feeble. It is probable, moreover, that with its help food is more readily absorbed, and nitrogenous waste is lessened if plenty of water is also taken.

*Potassium* is needed for cell-building, perhaps especially for the cells of red blood. It is most abundant in vegetable foods and some authorities would say that its good effects are partly dependent on the amount of sodium supplied, explaining in this way the common craving for salt which is found amongst vegetable feeders.

*Chlorine* is present in all human tissues and cannot be replaced by anything else. Our knowledge of its use is still very vague, but the jealous care of the body for its chlorides, especially in acute fevers and when chlorine is withheld, makes us believe that it must have a special value. In support of this view we note the persistent attempts of the higher animals to obtain it. It may well be that it aids iron in capturing and regulating the store of oxygen carried by the blood. We have seen already that the supply is in the form of sodium chloride.

*Iodine*. The value of this mineral is seen most

clearly when we look into the results which follow a lack in the supply. The chief of these seem to be a disturbance of the natural work of the thyroid gland and the birth of cretins. The gland needs iodine in order to control the body's use of food, so that no part shall grow and develop abnormally. Although the theory is still very much disputed it would seem that goitre is most prevalent in inland districts and that we get our supply of iodine best from sea air, things that live in sea water, from plants and animals of salt marshes, and from salt deposits in certain parts of the world where perhaps inland seas once flowed. It is found also in onions and some other vegetables.

The use of iodised salt, already compulsory in Bavaria, has been made the object of a successful government campaign in Switzerland and is gaining some favour in England. Switzerland, moreover, has attacked the problem of the birth of cretins by introducing a form of iodised chocolate which is given in small regular amounts to school children. Whatever may be the value of these measures we can at any rate set our faces against the undue refining of materials such as salt.

The following table will emphasise the special value in mineral matters of certain common foods which should take an important place in the diet of youth :

<i>Food.</i>	<i>Minerals Supplied.</i>
Milk . . .	Calcium, Phosphorus, Magnesium.
Egg-yolk . . .	Calcium, Phosphorus, Iron.
Red meat . . .	Iron, Magnesium.
Oatmeal . . .	Calcium, Phosphorus, Iron.
Wholemeal . . .	Phosphorus, Iron.
Spinach . . .	Calcium, Phosphorus, Iron.
Fish	Iodine.
Cod liver oil }	
Green vegetables . . .	Phosphorus, Potassium, Iron.

A good well-balanced mixed diet for an adult supplies on an average about 20 grammes of mineral matter, more perhaps than is actually needed. There is a strong likelihood that any surplus is excreted without actually entering the blood-stream. Calcium and iron are the two kinds most likely to be lacking and the only two in which a lack can be definitely shown to have bad results, though research is steadily throwing more light upon the value of the others. Some authorities would maintain that many of the benefits attributed to vitamins really belong to mineral salts. It is, we think, more likely that the two principles are inseparably linked.

## WATER

The value of water as a universal beverage is only now beginning to be realised, and it is not surprising that with the fast-growing idea of its importance there should be some exaggeration as to ways of using it. Broadly speaking, water is taken first of all to relieve thirst, that is to make up for what is lost through the skin and lungs and in combination with other waste products by way of the kidneys and intestine. This loss is reckoned as being from 2 to 3 quarts per day and even more in some forms of acute illness. Its restoration becomes absolutely necessary because :

(1) It is wanted for the body fluids, i.e. to make blood, to carry food, to form secretions and excretions. In other words no food could be dissolved, digested, absorbed, and assimilated, and no waste products could be driven out without it.

(2) It forms a part of every kind of tissue.

The tissues have in fact been called reservoirs of water and give to or take from the body fluids, so that

in a healthy person the total volume of fluid is fairly constant, water itself making up about two-thirds of the body weight. In acute illness the loss of weight and the dryness of the tissues can be largely explained by the greater amount of waste that the body must dispel and the greater demand upon the general supply of water.

With protein, a little mineral matter, and water the body can indefinitely subsist. With water only, life can go on from 20 to 40 days, without water perhaps only from 3 to 7 days.

(3) This retention of water by the tissues is needed in addition to keep the membranes soft and thus avoid friction of their surfaces.

(4) Its use is a means of increasing appetite and adding to the pleasure of eating, especially if cool spring water is available. On the whole there is much to be said for moderate drinking at meals in normal cases.

(5) It is closely connected with Vitamins B and C. B can withstand the process of drying, but this is rarely true of C.

(6) It helps to regulate body temperature.

About one-half of the necessary water is supplied by the ordinary food, so that if we reckon that about 4½ pints are lost per day we need to supply more than 2 pints as actual fluid. The amount, however, varies considerably with varying conditions, especially the degree of perspiration. A liberal supply should be given in acute fevers, and it is particularly useful in gout and diabetes, where it helps to get rid of poisonous waste. In some forms of heart trouble where it is unwise to lay too great a strain on the blood-vessels there is obvious need for caution.

## ROUGHAGE

This is a name favoured in America and given to certain forms of indigestible material, mainly cellulose, needful for encouraging healthy movements of the bowel. Roughage thus becomes a natural purgative, setting up mechanical movements, but it is also quite often closely connected with substances which act chemically in the same direction. An example taken from diet suitable for constipation will illustrate this point: fruits and vegetables are often bulky foods of which the intestine must reject a considerable part and at the same time they give valuable organic acids which chemically aid the rejection.

Roughage we get best from such things as vegetables, fruits, pulses, wholemeal bread, and oatmeal. A little serious attention to its value would help to do away with the pernicious fondness for purgatives and would undoubtedly lessen many of the nation's ills. It seems to be an inevitable law of Nature that bodily health, like mental and spiritual, should call for a due acceptance of roughage. In other words, safety rarely lies in taking the line of least resistance.

## VITAMINS

More than forty years ago some scientific work was done in the field of vitamins, but it was Prof. Hopkins of Cambridge who first drew general attention to it by declaring in 1906 the existence of what he called "accessory food factors." These have now come to be known as vitamins. It is agreed that they are present in minute quantities in many common foods which perhaps have for that very reason, among others, won and held their place in man's long history. Their chemical nature is for the most part still unknown,

but they seem to act almost as a presiding genius in the numberless changes which go on in the body, seeing to it that these changes tend to health and not to disease.

Numerous attempts have been made to manufacture food-stuffs by chemical means, but only in recent years has there been any success in making them also supply vitamins, and it would seem that there is something essential and elusive in natural foods which cannot yet be exactly copied but which can easily be refined away or destroyed. It is almost as though we fail to make living food just as we fail to create life.

More and more progress has been made in distinguishing different classes of vitamins. In fact, one expert has been heard to tell an audience that "there is a whole alphabet of the horrible little things." We are most concerned with four main types, though we may be allowed a glance at a fifth.

Vitamin A has an undeniable effect on growth and by some is often called the "growth vitamin." It is built up in plant life, and as it can be dissolved by anything which dissolves fat it is called "Fat Soluble A." The plants are eaten by animals, and the vitamin, thus transmitted, not only is stored in the animal body but reappears in the milk of mammals. Similarly it is transmitted to the human body and forms part of the milk of nursing mothers.

Besides being so important for growth this vitamin seems able to cure a certain ulceration of the eye, found specially in children. As far back as the year 1904 it was known that cod-liver oil and other animal fats could take a part in the cure.

Vitamin A is found best in green leafy plants, in some fresh fruits and vegetables, in all animal fats, except lard, and in certain other animal tissues.

Hence we seek it in grass, clover, green vegetables and salads, sea-plants, tomatoes, carrots, milk, egg-yolk, cheese, butter, cream, suet, dripping, fresh meat (especially heart, liver, kidney), oily fish, and the fat of fish livers.

Vitamin A resists the ordinary heat of cooking unless this is greatly prolonged or unless the food is at the same time exposed to air as in frying. This is an important point in the matter of food preservation and in the various ways of sterilising milk. The vitamin is necessary only in very small quantities, and the effect of a deficiency in man is only slight and gradual, doubtless because of his power to store it in his body. The effect on children and the young of animals is much more noticeable, especially if the lack is in the mother's milk. It is particularly important in periods of rapid growth or recovery and for expectant and nursing mothers; it is essential to all human beings and probably to most animals.

Vitamin B is soluble in water and hence is often called Water Soluble B. Its most important work seems to be to control the making of protein, that is to work in the mosaic, as it were, according to its own design. Thus, in the nursing mother it is busy attending to that kind of protein which shall best build up the body of her offspring, lactalbumin for the baby, casein for the calf. The lack of this vitamin causes a form of neuritis prevalent in the Far East and known as Polyneuritis or Beriberi. For this reason it is described as anti-neuritic.

It is found most securely in whole grains and seeds, especially in the germ, abundantly in yeast (particularly brewer's), in many fresh fruits and vegetables, in milk and egg-yolk, and in some animal tissues. Hence



we look for it in bran, unpolished rice, whole barley, wholemeal flours, beans, peas, lentils, potatoes, carrots, spinach, cabbage, turnips, tomatoes, oranges, lemons, grape-fruit, nuts, marmite and other yeast products, milk, eggs, heart, liver, kidney.

It is impaired or destroyed by undue milling and by canning, but resists the ordinary heat of cooking, though impaired and perhaps ultimately destroyed by excessive heat. Like A it is necessary only in small amounts and is easily obtainable in normal times. It is particularly important for growth and cannot readily be stored, so that its supply should be continuous, especially for children, adolescents, expectant and nursing mothers, and invalids.

Vitamin C is soluble in water, and therefore, like B, it is called Water Soluble. A deficiency amongst infants causes scurvy and has sometimes produced it in adults whose diet is much restricted, e.g. as in prisons and the Navy in earlier times. From this fact the vitamin is called anti-scorbutic. As far back as 1734 a dietitian pointed out that scurvy could be both prevented and cured by the use of fresh vegetables and fruits. Later study has shown conclusively that these are the best sources, e.g. cabbage, tomatoes, swedes, potatoes, germinating grains and pulses, oranges, lemons, and grape-fruit. There is also a little in fresh meat and in milk. It is absent from commercial lime juice. Orange juice, whether fresh or dried, is excellent, and the latter,<sup>1</sup> if sealed, seems to keep its virtue for a long time. Cheaper sources are the juices of tomato and swede.

Vitamin C is impaired by heat, especially if applied over a long period, and by many methods of preserva-

<sup>1</sup> Holt : *Food, Health, and Growth*, p. 177.

tion and storage. For instance, salting, canning, and drying generally affect it adversely. Exposure to air and mould also are injurious. Of all the vitamins known it is, in fact, the most sensitive. It would seem that Vitamin C can be stored in the body, as it can be withheld for some months from the adult without the appearance of definite symptoms.

Vitamin D is found in close connection with A and was formerly taken as a sub-division in the first class. From the fact that it seems to regulate the laying down of calcium in the bones, etc., and therefore to guard against rickets, it is known as the anti-rachitic vitamin. It occurs with A in animal fats and is probably oftener present than A in some vegetable oils. It appears to be even more resistant to heat than A.

Opinions differ greatly as to the power of diet to prevent and cure rickets. Experiments made by Paton and Watson seem to show that young dogs fed liberally with milk fat developed rickets in captivity, while a similar group, with less milk fat in the diet but allowed to run free in the country, escaped the disease. The probability is that there are several closely linked factors in diet and that these are aided by the ultra-violet rays of sunlight.

Vitamin E has not yet come clearly into the open, but those in the secret seem to say that it is importantly concerned in reproduction and is needed by both parents.

It is quite likely that there are bodily conditions which hinder the work of vitamins, especially the complication of diarrhoea in infantile scurvy. Certain it is that faulty nutrition cannot always be put down to a lack of vitamins.

We may conclude from what has been said that

vitamins, whatever their elusive character may be, are mainly a provision made by Nature in plant and animal life for the young of the species. For instance, Vitamin A is built up in "the young green fresh food of earth and sea," passes on to the vegetable feeders amongst animals, becomes a part of the milk of nursing animals, is stored up against emergency in the fat of the animal body, and so can be passed on to flesh-feeding animals, where again it can be stored. In plant life, after seeding, Vitamin A often disappears from the tissues, but Vitamin B appears in the seeds which give food to the young plant. Similarly, cod-liver oil loses some of its virtues after spawning time, and cow's milk is less rich in vitamins when the calf no longer needs it. Again, as provision for the young we find both A and B in egg-yolk, which is the chick's store of food in the shell. We cannot then too often insist on the value of jealously guarding for the young of the race what Nature so bountifully provides.

## CHAPTER V

### THE BODY'S USE OF FOOD

WE have looked into the nature and essential value of food-stuffs and have discovered ways in which they are to be obtained, and now we must consider briefly their behaviour in the body. We must, in fact, note the whole series of changes through which food passes, from the time of entering the mouth up to the point where it becomes effective for building tissue, supplying energy, etc., and, having fulfilled its purpose, is dispelled from the body to be used again by Nature in renewing the food supply.

In the body, food has to be finely divided and acted upon in many ways before it can be carried into all parts by the blood-stream. These processes come under the term Digestion, which someone has called a wonderful laboratory which we carry with us always. By its means food is broken up into simpler and yet simpler substances and is made diffusible, so that at last the body cells can take it and freely use it. Some of the changes are mechanical, such as chewing and the movement of tongue, gullet, stomach, and intestines ; some are chemical, such as the action of acids, ferments, etc., in the various digestive juices. Over all these the mind and personality exercise a powerful influence, so that often we find between individuals strange differences which can hardly be explained by ordinary laws of science.

Consider what takes place when we eat any food

substance. On entering the mouth it is at once acted upon by teeth, tongue, palate, and even lips, and is mixed with saliva. With satisfactory chewing it is broken up, softened, moistened, and finally moulded into a form which will allow it to pass easily through the gullet into the stomach. Some of the starch has already been changed by the saliva and made soluble, and this process under normal conditions is continued for a time after it reaches the stomach, since the mass of food carries saliva with it and its action is not at once hindered.

So far most of the changes have been in the nature of preparation for and protection of the stomach, which, in its turn, now begins services which will later protect the bowel and make its work effective, e.g. the stomach passes the food on in amounts suitable for the bowel to deal with, it converts it into semi-fluid form, it partially digests the proteins, slightly changes the fats, and to some degree sterilises the food mass. In short it changes it all into the form most fitted for the action of the new juices which will be forthwith poured upon it. These are three digestive juices which work in union. One is supplied by the pancreas and is of immense importance because it is able to act upon all three food-stuffs, proteins, fats, and carbohydrates. Another, the bile, is supplied by the liver and works chiefly upon fats, making it possible to decompose them into simpler substances. The third is made actually in the lining of the small intestine and is able to finish the work upon proteins and upon those sugars which, as yet, are not sufficiently simplified. Thus, as the food passes along the winding ways of the intestine, digestion is completed, and more and more the food materials, now completely diffusible, are

absorbed into the system. Proteins have been resolved to amino-acids, fats to fatty acids and glycerine, and carbohydrates mainly to glucose (dextrose). The proteins and carbohydrates pass into the portal vein and thence to the liver, which acts both as sorting-house and storehouse, especially storing carbohydrate as glycogen and at need changing it again to glucose for the general circulation. The fats enter the blood more directly by way of a special circulation. Any surplus fat can be converted into glycogen and stored in the liver and muscles. If there is still a surplus it can be stored in special cells of the fatty tissues.

Of the three chief food-stuffs, protein is least completely absorbed; fat, if not taken in excess, is almost wholly so, and even that which fails to reach the blood has probably a use in excretion which we have already noted. The degree of absorption is highest when the melting-point of the fat is low, e.g. butter and cream are more readily absorbed than bacon fat, and bacon fat than mutton fat. Starch, unless in very indigestible form, is normally used up well; cellulose, especially if young and tender, is partially digested through bacteria in the large intestine, while the remainder serves as roughage; finally, in normal cases, the absorption of sugar is probably the most complete of all.

In the blood-stream the tiny particles of food are oxidised and can at last be used by the cells to which they are carried. In these living cells heat is inevitably produced by the chemical action: heat is in fact a condition of their life; it is another aspect of that energy which is needed first for mere existence, then for growth and repair, and for every kind of nervous and muscular force. Hence it is that we measure

the energy value of food by a standard of heat units.

As protein is the only one of the three chief food-stuffs that can both build tissue and also give energy for movement, etc., and, as it is more readily oxidised and used by the cells than the others, it is needful to supply plenty of carbohydrate, which also can be quickly oxidised and used and therefore can spare protein for its main purpose of tissue building. Fat takes much longer to reach the cells, but has its own part to play as a protein-sparer. When everything, however, is done to protect protein, it still is, of course, impossible to ensure that all shall be used for tissue building.

We do not here forget the importance of mineral constituents and water. These two are already so simple that they can be absorbed without further change. As for vitamins, there seems as yet to be little certain knowledge of any changes which they undergo in the body, though it is highly probable that different individuals use them differently. All these things, though not supplying actual heat units, yet assist in the supply.

## CHAPTER VI

### DIET-SHEETS

EXPERTS have differed widely in their views on this subject, and it is not easy to find a theory sufficiently stable for our purpose. Still there are by this time certain principles which are held by many and on which British authorities are fairly well agreed. These we may consider, neglecting for the moment those points round which the war of experts still rages.

Of one thing we may be sure, and that is that the housewives of civilisation have not on the whole been mistaken in the course which experience has taught them. From them we may learn much. We may also to some extent trust our own instinct to guide us in laying down laws for diet under normal conditions. Further we shall wish to gain all we can from the numberless experiments which have been made and are still going on. With such aids we can go ahead.

In the Preface mention was made of the need for pure food and pure water in securing a nation's physical and moral well-being, and in Chapters III and IV we took note of those things which are classed as food-stuffs. Summing up now the conclusions which we then reached we see that the body needs as food the following substances: Protein, Fat, Carbohydrate, Water, Salts, Roughage, and Vitamins. We need not again discuss the special value of each, but rather we shall try to establish some rules regarding quantity and quality and the relations between the needful substances.



What, for instance, does it mean to overfeed, to underfeed a person ? What are wrong ways and right ways of feeding ? How shall we act so that the body, after receiving food, may get the fullest benefit from it ? What, in fact, is the ideal balance of food-stuffs and how shall we find it ?

From what has gone before we are ready to admit that the most important part of the problem is that connected with the amount and quality of the protein in the diet.

The last generation was intent on settling the matter of quantity, but the dietitians of the present are even more concerned with that of quality, and we can only suggest here what seems to be the best established claim, i.e. that for an average man, living under average conditions of health, occupation, climate, etc., in the British Isles the ideal protein ration is about 100 grammes daily, and of this about 30 grammes at least should be of grade A.I, i.e. protein derived from animal sources. Further, in spite of enthusiastic support given to other theories, it would seem that such a man best maintains the ideal balance and best stands against the onset of disease and other adverse conditions if he favours a well-mixed all-round diet, keeping his food as natural as possible, yet not neglecting the aid which cookery, bacteriology, laws of food preservation, etc., can give.

The standard just described has been reached through the study of innumerable cases amongst professional classes in many parts of the world and care has been taken to exclude all cases in which artificial conditions, such as poverty, restrict the power of obtaining protein. Moreover, the conclusions have been verified by exhaustive chemical experiments to

## DIET-SHEETS

determine the point of nitrogenous equilibrium for the ordinary man.

The Table on page 52 shows a number of ways in which the minimum ration of animal protein may be secured.

The standard of quantity for fat and carbohydrate has been reached in similar ways, and we conclude that the amount should be such that it will, with the protein, yield about 3,000 large calories (units of heat) per day. If we consider this in relation with what has been already said regarding the balance of protein and fat we may assume that a suitable ratio of food-stuffs for a normal adult (male) is, roughly speaking, one-third by weight of protein and fat and two-thirds carbohydrate. We shall soon see how to calculate the Calories for these amounts.

There is a tendency to take too little water, seeing that the adult loses more than 2 quarts per day in the urine and the breath and through perspiration. In actual fluid therefore we ought to take at the very least  $2\frac{1}{2}$  pts. per day (see Chapter IV).

Mineral salts are best secured by choosing a good mixed diet and not spoiling our food in the cooking. Too often do we unknowingly throw away the mineral salts actually present.

The necessary total amount of roughage varies greatly with the individual, but it is not difficult to find out just what will ensure daily a complete emptying of the large intestine.

Vitamins are secured if we insist upon pure milk, animal fats, whole seeds, potatoes, green vegetables, salads, and fresh fruit. On the whole we obtain them more easily in summer than in winter, as they ultimately are derived from the "young green fresh food

Food.	Amounts.	
	lb. oz.	grammes.
Cheese . . . . .	4½	117
Eggs (hen), 4 to 4½ eggs . . . . .	9½	270
Eggs (duck), 3½ eggs . . . . . nearly	10	275
Fish :		
Cod . . . . .	7½	205
Conger-eel . . . . .	8½	240
Eel . . . . .	12½	344
Haddock (smoked) . . . . .	7½	201
Herring (fresh) . . . . .	7½	206
Kipper . . . . .	7½	213
Mackerel . . . . .	9½	272
Oyster . . . . .	6 9½	3,000
Plaice . . . . .	13½	389
Salmon . . . . . nearly	7½	204
Sole . . . . .	8½	234
Sole (lemon) . . . . . nearly	9½	264
Sprats . . . . . nearly	8½	238
Soft roe . . . . . just over	4	115
Meat (fresh) :		
Beef . . . . . nearly	7½	204
Mutton . . . . .	9½	270
Pork . . . . .	7½	201
Liver (calf) . . . . .	7½	206
Liver (pig) . . . . . nearly	6½	175
Meat (cured) :		
Bacon (back) . . . . .	12½	341
Bacon (streaky) . . . . .	10½	302
Ham . . . . . nearly	9½	261
Milk . . . . . nearly	1½ pints	910 c.c.
Poultry, etc. :		
Chicken . . . . . nearly	8½	240
Duck . . . . . just over	10½	306
Goose . . . . . just over	9½	273
Rabbit . . . . . nearly	8½	240
Sausage . . . . . nearly	9½	268

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of land and sea." Fortunately, however, as we have seen, we are able to store some of them in certain parts of our own bodies and to obtain them in winter from other animals which have the same power.

Variations from the standard are naturally endless even for the British Isles. The most important causes are :

A. Climate and General Surroundings.

B. Personal Conditions, such as age, size and weight, sex, state of health, ordinary occupation, etc.

We know well enough that we ourselves normally desire food much more on a cold, bracing winter day than on a muggy day in summer or early autumn. A man from the slopes of the Pennines will naturally eat more heartily than the same man suddenly transported to the Equator and will relish a different kind of food. Our zest for food is much greater in healthy surroundings than in the stuffy atmosphere of small or crowded rooms, and so on. Again, though 3,000 Calories may be an ideal daily allowance for a normal Englishman in sedentary occupation, the Singapore native student may be content with 1,600, the professional man in Java with 2,500, one in Finland or an active athlete may demand 4,000, and for an Antarctic Expedition the calorie value may be as high as 7,000.

Age and other conditions will necessarily complicate standards. A healthy boy of 10 years needs more food than one of 7 ; a tall lean man needs more than a stumpy one of the same weight ; a woman, other things being more or less equal, can thrive on less than a man, chiefly because she deals more economically with her resources and, in particular, with her protein ; a diabetic patient needs far less food than a

consumptive patient living in the open air, and the latter needs less than he would successfully deal with if he recovered and took up outdoor work; a man doing heavy manual work can with benefit use much more food than a city clerk, and a big boy of 16 years, growing fast and doing steady muscular work, perhaps needs more than any other type. Again, a nursing or expectant mother needs provision in kind and quality for the special demands made upon her.

There is yet another cause of variation which too often operates and which we would fain remove: that is, the limit set by the stress of poverty. It is this restriction that often makes it absolutely necessary to cut down protein and fat in the artisan household and substitute carbohydrate. Fortunately the manual labourer can work off the excess by means of muscular energy, so that it need not be wholly evil.

The following fractions of the standard ration are commonly accepted:

Woman	.	.	.	.	.	0.83
Child 2-6 years	.	.	.	.	.	0.5
6-10 "	.	.	.	.	.	0.6
10-14 "	.	.	.	.	.	0.83

Boys and girls at the period of maximum rate of growth need even more than adults. Dr. Robert Hutchison<sup>1</sup> suggests that 3 such boys or girls should count respectively as 4 men or 4 women.

We are now in a position to consider a method of planning and working out a diet-sheet, and we really need not be afraid of the figures involved, though they may at first look formidable.

Assuming that 3,000 C. (large calories) is a suitable yield from the daily food of a normal man in sedentary

<sup>1</sup> *Diet in Childhood and Adolescence.*

work, say a clerk, we must first realise that food is actually consumed or burnt as fuel in the body and like all other burning fuel gives off heat which is converted into energy. This energy is needed for growing, for repairing tissue, for movement and work, and for keeping up the natural heat of the body. It is therefore reasonable to measure body-energy in terms of heat, and that is why we use the large calorie as our unit. This is simply the amount of heat needed for raising the temperature of 1 kilogram of water 1 degree Centigrade.

Next we go to the food expert, who tells us that :

1 gramme (average)	protein yields . . .	4.1 C.
1       "       "	fat yields . . .	9.3 C.
1       "       "	carbohydrate yields . . .	4.1 C.

or, in other words—

1 oz. (= 28.3 grammes)	protein yields . . .	116 C.
1 oz.	fat yields . . .	263 C.
1 oz.	carbohydrate yields . . .	116 C.

At this stage, if we could buy our food-stuffs in separate lumps, e.g. if we could ask our butcher for 30 grammes of ~~meat~~ protein and our grocer for 70 grammes of vegetable protein, we could in that simple way secure a day's suitable protein ration for one average person. Actually, however, as we know already, food-stuffs are blended, sometimes in very complex ways, in the common foods, and our next step, therefore, is to seek information on this point. With the aid of food-tables we are able to work out the varying weights of energy-yielding food-stuffs in any given weight of food. Our chief difficulty here is that if we have an excess, say, of carbohydrate, we

often cannot remedy it without upsetting the balance of protein and fat as well, so that the process sometimes becomes an intricate puzzle, and for that very reason is interesting.

Diet-sheets for special cases are naturally more difficult. Some general rules can be laid down, but, for the most part, each case must be taken on its own merits, and in invalid diet the instructions of the doctor will be the first consideration. There does, however, at present seem to be a need for simple dietetic guidance in cookery and for selected recipes useful in special forms of sickness, and these will be found in a later part.

The diet-sheets which follow will serve to illustrate what has been said.

#### I. NORMAL WINTER DINNER FOR FOUR ADULT MALE STUDENTS WHO MAY BE CONSIDERED AVERAGE CASES.

*Menu* : Roast pork with apple sauce ; baked potatoes, Brussels sprouts ; cornflour pudding (made with eggs) ; jam sauce ; bread, cheese ; oranges. (See Table on page 57.)

The meal as shown provides about 5,885 C. for 4 men, i.e. approximately 1,471 per head, or, in other words, it will give just under half the number required for the whole day.

The fat is admittedly high, but this excess will probably be justified by two facts, viz. (i) that fat can be more readily taken and used in winter than in summer, and (ii) that fat need not and should not under these circumstances take an important place in other meals on the same day.

Mineral Salts, Roughage, and Vitamins are well provided in such a meal.

Food	Weight (oz.)	Percentages			Weight of Food-stuffs (oz.)		
		Protein	Fat	Carbo-hydrate	Protein	Fat	Carbo-hydrate
Pork . . . . .	20	12.3	26.2	—	2.46	5.24	—
Apples (fresh) . . . . .	16	0.4	0.5	12.5	0.06	0.08	2.00
Potatoes . . . . .	40	2.2	0.1	18.4	0.88	0.04	7.36
Sprouts . . . . .	24	1.5	0.1	3.4	0.36	0.02	0.82
Cornflour . . . . .	3	—	—	90.0	—	—	2.70
Sugar { Sauce . . . . .	1 }	—	—	100.0	—	—	3.00
(white) { Pudding . . . . .	2 }	—	—	—	—	—	—
Eggs (2) . . . . .	4	11.9	9.3	—	0.48	0.37	—
Milk (2 pts.) . . . . .	40	3.5	3.5	5.0	1.40	1.40	2.00
Jam . . . . .	4	0.6	0.1	70.0	0.02	trace	2.80
Cheese (Cheddar) . . . . .	3	33.4	26.8	—	1.00	0.80	—
Oranges . . . . .	16	0.9	0.6	8.7	0.14	0.10	1.39
Bread (white) . . . . .	6	6.5	1.0	51.5	0.39	0.06	3.09
					7.19	8.11	25.16

C.

$$7.19 \times 116 = 834.04 \text{ from Protein.}$$

$$8.11 \times 263 = 2,132.93 \text{ „ Fat.}$$

$$25.16 \times 116 = 2,918.56 \text{ „ Carbohydrate.}$$

5,885.53 Total Calories.

## II. A DAY'S DIETARY FOR A NURSING MOTHER.

*Breakfast*<sup>1</sup>: Fried bacon, bread, milky coffee, apple.

Food	Weight (oz.)	Percentages			Weight of Food-stuffs (oz.)		
		Protein	Fat	Carbo-hydrate	Protein	Fat	Carbo-hydrate
Bacon . . . . .	2	8.1	65.2	—	0.16	1.30	—
Bread (white) . . . . .	2	6.5	1.0	51.5	0.13	0.02	1.03
Coffee . . . . .	0.5	0.2	—	0.7	—	—	—
Milk . . . . .	10	3.5	3.5	5.0	0.35	0.35	0.50
Sugar (white) . . . . .	0.5	—	—	100.0	—	—	0.50
Apple (raw) . . . . .	4	0.4	0.5	12.5	0.02	0.02	0.50
					0.66	1.69	2.53

<sup>1</sup> In actual practice it is likely that the mother will prefer to take a little butter instead of using up the whole of the bacon fat.



*Dinner* : Baked cod, potatoes, baked custard, prunes, lemonade.

Food	Weight (oz.)	Percentages			Weight of Food-stuffs (oz.).		
		Protein	Fat	Carbo-hydrate	Protein	Fat	Carbo-hydrate
Cod . . . . .	10	16.5	0.4	—	1.65	0.04	—
Dripping . . . . .	0.5	3.0	85.0	—	0.01	0.42	—
Potatoes . . . . .	8	2.2	0.1	18.4	0.18	0.01	1.47
Egg . . . . .	2	11.9	9.3	—	0.24	0.18	—
Milk . . . . .	10	3.5	3.5	5.0	0.35	0.35	0.50
Prunes . . . . .	2	2.4	—	66.2	0.05	—	1.32
Sugar (white) . . . . .	1.5	—	—	100.0	—	—	1.50
Lemon . . . . .	1	1.0	0.9	8.3	0.01	0.01	0.08
					2.49	1.01	4.87

*Tea* : White bread, butter, jam, tea, milk, sugar.

Bread (white) . . . . .	3	6.5	1.0	51.5	0.19	0.03	1.54
Butter . . . . .	0.5	2.0	82.5	—	0.01	0.41	—
Jam . . . . .	1	0.6	0.1	70.0	0.01	—	0.70
Tea . . . . .	0.25	0.2	—	0.6	—	—	—
Milk . . . . .	2	3.5	3.5	5.0	0.07	0.07	0.10
Sugar (white) . . . . .	0.5	—	—	100.0	—	—	0.50
					0.28	0.51	2.84

*Supper* : Boiled egg, brown bread, butter, gruel (made with milk), sugar, cress.

Egg . . . . .	2	11.9	9.3	—	0.24	0.18	—
Bread (brown) . . . . .	2	6.3	1.2	46.3	0.12	0.02	0.93
Butter . . . . .	0.5	2.0	82.5	—	0.01	0.41	—
Oatmeal . . . . .	0.5	14.2	7.3	65.9	0.07	0.03	0.33
Milk . . . . .	10	3.5	3.5	5.0	0.35	0.35	0.50
Sugar (white) . . . . .	0.5	—	—	100.0	—	—	0.50
Cress . . . . .	1	0.7	0.5	3.7	0.01	trace	0.04
					0.80	0.99	2.30

C.

Protein (0.66 + 2.49 + 0.28 + 0.80) oz. . . . . 490.68  
 Fat (1.69 + 1.01 + 0.51 + 0.99) oz. . . . . 1,104.60  
 Carbohydrate (2.53 + 4.87 + 2.84 + 2.30) oz. . . . . 1,454.64

Total Calories . . . . . 3,050<sup>1</sup> . . . . . 3,049.92

<sup>1</sup> This number will need to be raised (e.g. by an increase of carbohydrate) if the mother is again taking up active duties, or if other conditions call for it.

In working out this dietary, the meals for the whole day could, if necessary, be cooked with one gas-ring and a small oven or even on a small oil stove supplied with oven.

The following diet-sheet was planned as an examination test, by a young student training as a health visitor, who also, as part of the test, bought and cooked the corresponding meal, using one gas-ring throughout.

### III. MID-DAY DINNER FOR A LANDLORD'S AGENT, HIS WIFE, THEIR CHILD OF 5 YEARS, AND A GIRL LODGER WHO WORKS IN A BISCUIT FACTORY.

*Menu* : Brown stew with dumplings and potatoes; fruit mould; brown bread, cheese, lemonade.

Food	Weight (oz.)	Percentages			Weight of Food-stuffs (oz.)			Cost. s. d.
		Protein	Fat	Carbo-hydrate	Protein	Fat	Carbo-hydrate	
Stewing Steak	16	20.0	6.0	—	3.20	0.96	—	10
Onion . . .	4	1.6	0.3	9.1	0.06	0.01	0.36	} 2
Carrots . . .	8	1.1	0.4	9.3	0.09	0.03	0.74	
Turnip . . .	2	1.3	0.2	8.1	0.03	trace	0.16	
Potatoes . .	16	2.2	0.1	18.4	0.35	0.02	2.94	2
Flour . . .	9	9.5	0.8	75.3	0.85	0.07	6.78	0½
Dripping . .	1	3.0	85.0	—	0.03	0.85	—	0½
Suet . . .	4	4.7	81.8	—	0.19	3.27	—	2
Parsley (sprig)								
Gooseberries .	8	0.4	—	8.9	0.03	—	0.71	1½
Sago . . .	3	0.2	0.2	86.7	0.01	0.01	2.60	0½
Sugar (white)	6	—	—	100.0	—	—	6.00	1½
Brown Bread	8	6.3	—	47.5	0.50	—	3.80	1
Cheese . . .	2	33.4	26.8	—	0.67	0.54	—	1½
Apple (for child)	4	0.4	0.5	12.5	0.02	0.02	0.50	1
Lemons (2)	4	1.0	0.9	8.3	0.04	0.04	0.33	1½
					6.07	5.82	24.92	2 1½

## 60 FOOD VALUES IN PRACTICE

Number of Calories required :

Man . . . . .	3,000 per diem.
Wife . . . . .	2,700 „ „
Child (5) . . . . .	1,800 „ „
Girl (18) . . . . .	3,000 „ „
<hr/>	
Total . . . . .	10,500

Of this total about half is needed for the mid-day meal for the family.

∴ Actual number of Calories needed is 5,250.  
Calories :

$6.07 \times 116$ . . . . .	= 704.12 Protein.
$5.82 \times 263$ . . . . .	= 1,530.66 Fat.
$24.92 \times 116$ . . . . .	= 2,890.72 Carbohydrate.
<hr/>	
Total . . . . .	5,125.50

Number of Calories given in above meal, 5,125.

### FAMILY BUDGET.

Weekly Income :

	£	s.	d.
Man's Wages . . . . .	2	10	0
Lodger pays . . . . .		18	6

Total . . . . . £3 8 6

Expenditure :

	£	s.	d.
Rent (3 rooms) . . . . .	15	0	
Insurances . . . . .	2	0	
Clothing clubs, etc. . . . .	5	0	
Boots and Repairs . . . . .	4	0	
Cleaning Materials . . . . .	1	0	
Fuel, lighting . . . . .	3	0	
Husband's allowance . . . . .	3	6	
Food . . . . .	1	12	0
Balance . . . . .	3	0	

Total . . . . . £3 8 6

*Cost* : The family budget allows £1 12s. a week for food for the whole family, i.e. about 4s. 6d. a day. Of this, about half may be allowed for the mid-day meal. The meal given costs 2s. 1½d., which is within this limit.

*Food* : The man and his wife are not doing very heavy work and so do not need so much food, while the factory girl of 18 is doing hard work and is at an age when she needs good nourishing food. The child of 5 is also growing and requires good food. The stew contains good protein in the meat and in the vegetables, and good animal fat in the dripping and suet. The pudding contains fresh fruit, and also carbohydrates, as do the potatoes and flour. These are necessary for energy production. There is good mineral matter from the vegetables for the child, and he must end his meal with an apple as a cleansing food and for the vitamin value. The grown-ups will take brown bread and cheese which contain Vitamins A and B, and lemonade, made with cold water, will be given to each one for its value in Vitamin C. Brown bread also contains cellulose for roughage.

Lest some readers should expect to find in the caloric standard more than is right or reasonable, it will be well to remind ourselves of its limitations : the first is fairly clear, namely that it cannot of itself take note of certain vital necessities in food, e.g. Water, Mineral Salts, Roughage, and Vitamins. The planning for these will therefore be an important side issue in every dietary. The second is that it cannot take much notice of the quality of food as bought. A poor quality will probably entail a more than average amount of waste. Then, thirdly, there is inevitable

waste in preparation, cooking, and use, no matter how good the cook may be or how careful the eater. Fourthly, it cannot of itself show the varying ways in which by different people a given amount of prepared food may be actually absorbed and used by the body.

Lastly, there is perhaps the danger of making the whole scheme stiff and inelastic, but we shall surely avoid this if we keep our aim well in view and if, while refusing to have food and its nature for ever in our thoughts, we yet look upon it in such a way that we allow it to make its best contribution in the scheme of human life and endeavour.

## CHAPTER VII

### HOUSEHOLD BUDGETS

At this point we come upon problems of much difficulty which need wisdom and tact for their solution. Owing to many causes there is only too often in the ordinary home a lack of that foresight and planning which go to the making of a good family budget. Often such matters have been wholly omitted from the training of husband and wife, or the wife is inexperienced and lacks the help which her husband might give. Often the busy wife would gladly lend a most intelligent interest and attention to such things, but time is lacking. Sometimes interest and perseverance themselves are absent, and, worst of all, very often the most sincere and reasonable attempts to tackle the problem remain fruitless through lack of a living wage. In these and other ways may be explained that common failure to distinguish between real necessities, recreation, pleasures, and superfluities, or at least to see their true values.

We are not, however, without remedies, such as may be found in a general change of outlook, the training of the adolescent boy and girl in principles of citizenship, attention to the problem by health visitors and others, and the winning of the complete sympathy and co-operation of those who actually make the family budget or supply the funds for carrying it out.

The general principles underlying this work of budget-making are to weigh relative values and to use funds accordingly. The coat must, in fact, be cut

according to the cloth, but it ought not to be necessary to skimp it so that it fails to serve its purpose. No one ought to be forced to submit to degrading conditions of life, but much has still to be done before it can be generally possible for the families of the middle classes and the poor to have their ideal budgets. It is all to the good that the masses are at last effectually voicing their demand for a higher standard of life so long as they see, more and more clearly, what the higher life really involves.

All budget-makers must recognise as their general basis the necessity for food,<sup>1</sup> rent, fuel, and clothing, and almost inevitably light must be added. The proportion set aside for these things increases as the income decreases, and consequently with the lower income the proportion for other things grows less, however desirable they may be. Naturally there may come a point where the income is wholly swallowed up in supplying the five chief needs.

After admitting this general basis, the next step is to mark the many variable circumstances which affect budget-planning. Of these the most important are :

- (1) Kind of Income.
- (2) Number of Wage-earners.
- (3) Station in Life.
- (4) Type of Life.
- (5) Locality.
- (6) Size of Household.
- (7) Ages of its Members.
- (8) Health of its Members.
- (9) Unemployment.
- (10) Possibility of State Relief.

<sup>1</sup> Rowntree divides into Food, House Rent (including Rates), and Household Sundries—*Poverty*.

### (1) KIND OF INCOME.

Sometimes a definite weekly wage is fairly secure, but this cannot be hoped for by the casual worker and many piece workers. Sometimes the income is received at longer intervals, whether annually, or twice or thrice per year, or monthly ; this salary may be definite or fluctuating. Sometimes the income may be wholly variable, such as that of the doctor, the private nurse, the actor, the "supply teacher," etc. This matter will be the first special consideration of the budget-maker, and full allowance must be made for each kind of uncertainty and a definite margin of safety must be left.

### (2) NUMBER OF WAGE-EARNERS.

Generally speaking the chief wage-earner is the father of the family, but the total resources may be much improved by the exertions of adult unmarried sons and daughters. Here the chief difficulty perhaps is to reconcile the rights and the duties of these secondary wage-earners who pay into the family coffers. Lodgers also in some cases may be a source of revenue.

### (3) STATION IN LIFE.

The special claims which arise out of social obligations are sometimes ignored, sometimes over-estimated. The main point here is to distinguish between what is valuable and what is worthless in this keeping up of one's position, and to make conventions a help to progress and not a hindrance.



#### (4) TYPE OF LIFE.

This depends on many changing circumstances, chiefly the kind of paid work which is done, the neighbourhood and surroundings, number in household, and many other things. A sufficiently good illustration of the way in which it might affect the budget could be found in a comparison of the ordinary life of a travelling music-hall artiste and that of an average clerk in a small firm, both of them with families to rear.

#### (5) LOCALITY.

Great variation arises here : for the most part, life in great cities, especially London, is dearer than living in smaller towns, and the latter is dearer than country life, though the general rule is upset by such fluctuations as those which are caused by the aristocratic nature of certain towns. Compare, for instance, the prices of ordinary commodities in Edinburgh with those in the much larger Glasgow, or those in a small cathedral city with those of such a town as Birmingham. Again, the remoteness of some country districts naturally tends to increase prices.

#### (6) SIZE OF HOUSEHOLD.

This perhaps affects the budget more than anything else, especially if there is only one wage-earner. We must, however, remember that with good management the cost of food per head and some other things decreases as numbers increase. Suppose, for instance, that a child of 5 years is suddenly taken into a household of seven members of whom some are young children. Rent, fuel, light might very well be

unaffected, cost of food would probably be only slightly raised—unless, indeed, there had been no margin in the supply before—the proportion for clothing would probably increase a little, though in this matter economies are usually possible where numbers are concerned. Such a happening, in fact, would scarcely ever increase expenditure by one-seventh of the earlier figure.

#### (7) AGES OF MEMBERS.

Variation here is seen chiefly in the parts set aside for food, clothing, and education, the amounts normally rising as the children grow older. The matter of recreation will also have its place, since it often costs less, for instance, to provide suitable pleasure and relaxation for a child of two years than for one of twelve years.

#### (8) HEALTH OF MEMBERS.

It is obvious that a budget can be much more easily planned for the healthy than for the unhealthy household. If it is possible to prevent rather than cure we shall try to devise measures that make for health by attending to all those principles which are involved in good hygiene, of which the most important are good housing, good sanitation, good feeding, suitable work, wholesome recreation in the open air. Some hints on curative measures in feeding will be given in Part II.

#### (9) UNEMPLOYMENT.

This is most unfortunately a very serious problem at the present time, and the solution is baffling to all.

Much may be done through a clearer recognition of the unbreakable bonds between the various classes of the community instead of insisting upon their antagonism. In practice, however, at present, there is no doubt that careful provision should be made against temporary unemployment.

#### (10) POSSIBILITY OF RELIEF FROM THE STATE, ETC.

The proportions of the budget may be much affected by the chance of winning relief in money or in kind, e.g. pensions, sick benefit, unemployment, insurance, free milk, free school dinners, etc. We must also add those benefits of club membership which arise through the payment of a regular insurance.

We give below a few suggestions for the division of incomes more or less regular<sup>1</sup> :

#### I. INCOME £500 A YEAR. FAMILY CONSISTING OF PARENTS, 2 CHILDREN, AND MAID.<sup>2</sup>

	£	per cent.
Rent (including Rates and Taxes) . . . . .	80 a year.	16
Food . . . . .	130 „	26
Fuel and Light . . . . .	20 „	4
Wages . . . . .	30 „	6
Repairs, Cleaning Materials, and Laundry	20 „	4
Clothing . . . . .	80 „	16
Insurance . . . . .	20 „	4
Amusements, Travelling, etc. . . . .	30 „	6
Doctor, Dentist . . . . .	10 „	2
Education . . . . .	40 „	8
Reserve . . . . .	20 „	4
Books, Clubs, Subscriptions, and Gifts .	20 „	4
	<hr/> £500 <hr/>	<hr/> 100 <hr/>

<sup>1</sup> See Rowntree : *Poverty*.

<sup>2</sup> From *Housecraft*, by R. Binnie and J. E. Boxall, p. 206.

## II. £4 PER WEEK. PARENTS AND 4 CHILDREN.

	£	s.	d.	per cent.
Rent . . . . .	16	0		20
Food	2	0	0	50
Fuel				
Lighting				
Insurance, Clubs	8	0		10
Cleaning Materials				
Clothing, Repairs . . . . .	8	0		10
Husband's and Incidental Expenses . . . . .	8	0		10
	<u>£4</u>	<u>0</u>	<u>0</u>	<u>100</u>

## III.—The budget given in Chap. VI. (p. 60).

It is possible only to glance at the budgets for institutions such as schools, hospitals, nursing homes, hostels, asylums, etc., which all have their special needs and peculiarities. In some respects—at least in the matter of food—catering for large numbers is easier than that for the ordinary household. Perhaps the chief difficulties here lie in the tendency to monotony, and the obvious chances of lessening the value of the food as bought through the need of cooking it in the mass and the danger of over-cooking or delay in serving.

## CHAPTER VIII

### STORAGE

SOME ideas about storage are almost as old as house-keeping itself, and the modern expert is sometimes apt to forget how much he owes to the housewives who, quite unconscious of microbes, were yet willing through the ages to watch, to labour, and to learn from experience how food might be stored and preserved. Thus it is that with all the new and fast-increasing knowledge we yet do not discard the old homely use of heat and smoke, of salt, sugar, and vinegar, of cooling and drying. Now, however, the housewife in her turn has an enormous debt to pay to the scientist, who teaches her to wage war with less labour and more success against decay, moulds, and ferments in store-room and larder.

Ultimately the methods of storing must depend upon the varying nature of certain very minute forms of colourless plant life which are commonly known as microbes but which the scientist calls micro-organisms. They attack human food because, unlike green plants, they need organic food substances such as human beings need. Those organisms that concern us are :

1. Bacteria, causing Rot and Decay.
2. Fungi or Moulds.
3. Yeasts, causing Fermentation.

The science which looks into their nature and growth is known as Bacteriology.

It is clear that if we are to master thoroughly the principles of storage we must find out the conditions under which these tiny plants are destroyed, or at least cannot thrive and multiply. To some extent they vary for the three classes given above.

1. *Bacteria*, as we have said, are extremely minute plant forms belonging perhaps to the very lowest stage of plant life of which we have knowledge.<sup>1</sup> They abound in air, milk (especially sour milk), water, and soil, and, in fact, seem able to thrive in almost any surroundings. They multiply by fission, i.e. the division of the individual into distinct beings, but only when moisture is present. Sometimes spores arise, but when this happens the individual gives up its own existence to a spore because the latter is able for some time to resist unfavourable conditions such as excessive heat or drying.

Besides disliking dryness and heat, bacteria are antagonistic to the presence of salt, acidity, and large amounts of sugar, and we are able to fight undesirable types by merely establishing these conditions for them. Although affected by heat they do not yield to it so readily as moulds and yeasts, and some forms will resist even a high degree, while the spores most usually stand out against all the ordinary processes of heating.

The chief foods liable to attack by bacteria are fresh meat, fish, poultry, etc., eggs, milk, and moist vegetables. Moulds and yeasts are usually present also, but the growth of bacteria is so much more rapid that they tend to counteract the other forms. Indeed, even

<sup>1</sup> There is reason for thinking that the single cell of which each plant is composed is of a simpler nature than that which we find in fungi or yeasts or in the lowest forms of animal life,

bacteria are not wholly to be abhorred, (1) for the reason just given, (2) for certain services rendered in the human body, (3) for their work in maintaining and increasing the fertility of the soil, and (4) for their part in the process of making vinegar, which is itself a most important preservative. Then also (5) they help to give the delicate flavours of butter and the stronger but attractive flavours of cheese, and (6) they play a part in the making of bread.

2. *Moulds* are in reality very small simple plant-beings of the fungus group and are therefore closely allied to the mushroom and that much more conspicuous fungus which causes the rotting of wood.

Each kind of mould consists of a mass of tangled threads, generally invisible to the naked eye, and putting forth a number of so-called "fruiting bodies," very variable in form and usually visible without the aid of a microscope.

Moulds can live and grow in most kinds of food, but often succumb to bacteria and do not resist unfavourable conditions so strongly. Unlike bacteria they do not mind acid or sugar. They need oxygen for their ready growth and they do not demand moisture to the same extent as bacteria or yeasts. We all, for instance, have had experience of mouldy flour or even mouldy leather. Moulds are easily killed by heat and most of them are checked by cooling and freezing. Further, vinegar and salt can be used to counteract their growth.

The chief foods affected by moulds are for the most part those which are unfavourable to bacteria, e.g. substances slightly moist such as bread, cake, pastry; sweet or acid foods such as jam and certain fresh or

stewed fruits<sup>1</sup>; all kinds of cheese. Some types, e.g. Stilton, Gorgonzola, are not considered perfect until the moulding process is far advanced. Mould, in fact, though as a rule not desirable, is yet not harmful.

3. *Yeasts* are made up of a number of extremely small plants only visible through the microscope. Each tiny being is a single cell which is able to multiply by budding so that a group of cells, often clinging together, can be formed in a very short time, as, for instance, in the "setting of the sponge" in bread-making. Yeasts can make good use of moisture; they have a leaning towards acids and they are able to act on sugar, breaking it up into alcohol and carbonic acid gas and causing the kinds of fermentation which we all know well.

Yeasts, like bacteria and moulds, can grow in most kinds of food, but, like moulds, they often give place to bacteria and they are easily destroyed by heat. They need plenty of oxygen and in this respect are unlike bacteria. The chief foods to be spoilt by yeasts are fruits and fruit juices. On the whole, yeasts do more good than harm, through their use in making bread, wines and beers, and the alcohol for vinegar. Even fermentation in ordinary fruits is to a certain point attractive to many people, as, for instance, in preserved damsons used for a pie or pudding.

Here we may suitably hint at the need for waging war against dirt and flies in larder and storeroom, since their presence involves a greater danger of harmful microbes.

Turning now to what has already been said about

<sup>1</sup> In these, mould is adverse to Vitamin C.



the care of larder and cupboards (Chapter I), we realise more forcibly the need for :

- (1) Light ; (2) ventilation ; (3) utter cleanliness ;
- (4) adequate space ; (5) coolness ; (6) dryness ;
- (7) regular supervision.

When we come to consider methods of storage we shall perhaps do best to divide our goods first into two main classes : A. Dry ; B. Perishable.

Those in class A can be re-divided into :

- (1) Cereals, pulses, sugar, etc.
- (2) Bread, cakes, etc.
- (3) Jams, pickles, etc.<sup>1</sup>
- (4) Cleaning materials, etc.<sup>1</sup>

Those in B fall chiefly under :

- (1) Meats, fish, poultry, etc.
- (2) Dairy products.
- (3) Vegetables, fruit.

Broadly speaking, Class A monopolises the store-room, which must be guarded principally against moulds and yeasts, and Class B is found in the larder, which must be the main stronghold against bacteria.

In flats and small houses only too often the store-room dwindles to a single cupboard in the kitchen, and the larder is merely a meat-safe. Yet this somewhat meagre provision can be used with wholly good effect by the resourceful housewife who has grasped the main principles of storage. Often it is possible to add extra shelves to the one cupboard and even to the meat-safe.

<sup>1</sup> These two subdivisions are taken best in Class A, although the term "dry" does not exactly suit them.

Turning back to Class A we note that, however scanty the cupboard room, we must at any rate separate the articles of the four different groups, partly for their own sake and partly for convenience in use.

(1) Whole cereals such as barley, rice, oatmeal ; so-called cereals such as sago, tapioca ; ground cereals such as fine oatmeal ; pulses such as haricot beans, lentils ; different kinds of sugar ; all keep well in covered jars or canisters, or even jam jars. Flour is best kept in a bin of enamel or wood. Cornflour does very well in its own packet, and patent groats and barley, etc., may as well stay in their special tins. All these can safely be kept for a long time except oatmeal and semolina.

(2) Bread should be kept in a well-ventilated enamel pan with lid, or in an old-fashioned earthenware "jowl" with lid, or, if these things are too expensive, a ventilated biscuit tin is quite suitable. Cakes should, of course, be kept quite separate from bread, and biscuits separate from cakes or bread, while small pastries (e.g. mincepies or tarts) should again be kept by themselves. All three varieties are best in tins.

(3) Jams, preserves, bottled and tinned fruits, preserved vegetables, pickles, etc., should all have their separate places and should be kept cool and perfectly dry. Simple ways of preserving food are a tempting digression here, but we must avoid it and merely say that the reader will find most interesting information on the subject in other places.<sup>1</sup>

(4) It is hardly necessary to say that cleaning materials and general household stores should be kept well away from all food. Lump soda, candles, scrubbing mixture, etc., keep well in earthenware jars ; borax, bicarbonate of soda, fuller's earth, etc.,

<sup>1</sup> e.g. Conn & Conn : *Bacteriology*.

are best in tins or wide-necked bottles with corks, stoppers, or screw tops. Poisons must be kept in special bottles, strictly labelled, absolutely by themselves, and, if children are about, should be under lock and key.

Throughout this class, dryness, coolness, and abundance of light are the three chief needs.

The food belonging to Class B is, as we have seen, more usually the prey of bacteria, though moulds and ferments also sometimes appear in the larder.

(1) Uncooked meats of all kinds should, if possible, be hung in a muslin cage. This actually improves the meat except in very hot weather, when it should remain in cold storage with the butcher or poulterer until wanted, unless the house is lucky enough to have its own refrigerator.

Uncooked cured meat will naturally keep a little longer on account of the special properties of the salt or smoke (or both), used in the curing.

Cooked meat keeps reasonably well except in hot or damp weather, and may be laid on a clean flat dish and covered with a cage of perforated metal or wire or muslin. It should not stand in any gravy or broth.

(2) Eggs should, if possible, be kept just above freezing-point or at least in a cool place. If quite new when treated they can be excellently preserved in sodium silicate (water-glass).

In warm weather butter should, if possible, be kept in a cool cellar, or in a specially constructed butter cooler, or under a clean earthenware flower-pot which is completely covered by a white muslin cloth with its edges resting in cold water.

Milk, whether fresh, boiled, or scalded, should be covered and kept in a place as cool as possible. Cream

is kept in the same way. Cheese should be wrapped in grease-proof paper and kept in a jar or bowl.

Fresh fruit, ideally stored, should have a room to itself, as many fruits, especially apples, oranges, and lemons, have a very penetrating smell. If this is not possible, it should be placed in layers, and, if not too small, on shelves made of wooden laths with spaces between—similar, in fact, to the shelves of a linen cupboard. Small soft fruit (e.g. raspberries, blackberries) should be spread in a thin layer on a flat dish, and, if it is quite necessary to keep it overnight uncooked, the fruit should be sprinkled with fine sugar, which serves the double purpose of discouraging bacteria and encouraging the flow of juice. The only common fruits which will keep for any length of time without special means are apples (best of all) and unripe fruits; lemons and oranges, if perfectly sound when bought, will keep well for a week or so.

Stewed fruit needs no very special care, except that mould and fermentation should be guarded against by boiling up the fruit if it must be kept for several days. This is also a wise precaution when canned or bottled fruit is opened, especially if home preserved, i.e. when it probably has not been subjected to heat higher than that of boiling water.

Fruit-pies, of any size, will do best in the larder, i.e. with the fruits rather than the pastries. This applies also to puddings of many varieties.

A good supply of clean muslin covers—there are many suitable types now in the market—will be found most useful in the larder, as dust and flies are eager to enter in spite of all precautions.

A vegetable rack, which could quite simply be made at home, is a thing worth having and could in many

cases be kept in the scullery instead of the larder. The vegetable supply will naturally be very often renewed except in the case of potatoes. If the house has its own garden, there may be chances of earthing vegetables such as potatoes, artichokes, carrots, parsnips, beetroot.

We cannot too often emphasise the need for frequent and regular supervision of all stocks in storeroom and larder.

## CHAPTER IX

### MARKETING

It often happens that the housewives of the poor, if really thrifty, can teach us a great deal of the science of marketing, for they have been thoroughly trained in the hard school of dire necessity.

What shall we buy? How much, where, how, when shall we buy? Why do we choose this food before that? These questions we needs must answer if our buying is to be successful.

Perhaps the first point to consider is the actual average amount that we may spend on food, and this, as we have seen, is based upon the suitable division of the family income, which itself depends on many varying conditions.

The size of the family party perhaps should next be noted, and this of course may vary even from day to day. On the whole it is easier and cheaper (per head) to buy for a large than for a small number.

Next we shall have an eye to the age, sex, condition, occupation, etc., of those for whom the food is to be bought. The invalid, the nursing mother, the small child, the fast-growing boy or girl, the hard-working man or woman, each and all will need special thought, and to give each type its proper nourishment will involve some knowledge of food values, whether based on observation and experience or on simple scientific rules which now can be understood by all who are fit to undertake such a work as marketing. The

ideal to be aimed at in the balance of food will guide us in the matter of quantities and varieties.

Another important point is to buy food which is duly in season. Not only will such food be cheaper but also more fitting in every way to the need of the moment, and therefore more appetising and nourishing. The knowledge of what is in season may be won by observation and experience and by referring to good cookery books and the newspaper.

The means of storage will greatly influence marketing. For instance, it is quite useless to buy quantities for which we have no room, or kinds of food in advance which we know will not keep well in our own larder or storeroom. Some experts would advise the housewife to buy most things in large quantities, but this matter needs quite delicate discrimination, and varying cases must in the end be judged on their own merits. The chief advantages of large stores are :

(1) A saving of time and energy and sometimes of money.

(2) The housewife's preparedness for emergencies—though even large stocks suddenly come to an end.

(3) The improvement of a few articles by keeping. Soap is a good example of this.

The chief disadvantages are :

(1) The inability of the average housewife in middle and lower classes to take a sufficiently broad view for large stores or to provide at any moment the funds necessary for them.

(2) A temptation to be too lavish, perhaps unconsciously, when one is dealing with abundance of material. Many maids are prone to this fault, and even housewives might sometimes commit it !

(3) The spoiling of the freshness of a very great number of things in store.

We have already noted that most cereals, pulses, sugar, tea, cocoa, will keep for a long time under suitable conditions and we may add to this list such things as spices and condiments, relishes, flavourings, dried fruit (moderately well), crystallised fruit, jams, preserves, and pickles. Of these items, therefore, we shall build up our orders for larger stores if we decide that they will benefit us.

There is scarcely anything against our laying in a good store of home-made jams, marmalade, pickles, etc., if we have room for them and know that they will be needed. One might venture to say that no commercial jam or pickle has yet been able to compete in price or value or distinctive quality with a home-made jam or pickle made by a good cook in accordance with a good, well-tested recipe.

It is often difficult to decide in what neighbourhood and at what type of shop to make our purchases. Large shops have the advantage of abundant supplies, constantly renewed, but to the humble housewife they are often a trial through the presence of crowds of customers, many of whom are giving larger orders than her own. The novice at any rate does well to explore a little before settling down to her shops, and finally to choose reliable tradesmen, as near her own home as possible, with whom she has proved that she can get best value for her money. To shop in one's own neighbourhood certainly saves time and energy and fosters a kind of social loyalty, and there is much to be said for the value of becoming known and respected by trustworthy tradesmen of one's own community.

Most of us are aware that dear food is not necessarily



the best, but we probably need guidance in the true grading of food. Under present conditions cereals, dried pulses, and dried fruits are the cheapest and fish in general is the dearest. Fruit, butter, eggs and some vegetables are also dear. Milk, considering its nature, is cheaper than is usually supposed, and ordinary cheese is decidedly cheap. Professor Mottram has compiled the following list<sup>1</sup> for the help of the "family":

"An economical dietary must be based upon cereals and cereal products, the pulses, dried fruit, potatoes and onions, butter and suet, milk, cheese, and bacon. Moderate economy only can be found in the meats, while lean fish and eggs are costly and to be considered luxuries. Green vegetables and fruits from the caloric point of view are also expensive, but as they supply some of the vitamins and the necessary salts they are essential, and small quantities, despite the caloric cost, must be included in the diet."

For true success in marketing the housewife should know the "points" of things which she buys, and here again some guidance can be given, though personal observation and experience are the best teachers.

Cereals, pulses, etc., should be perfectly dry and clean-looking and not mixed with any bits from other sacks or bins. Flour, ground rice, oatmeal, etc., should be absolutely without parasites. Sugars also should be clean-looking, but certain kinds (e.g. Demarara, Barbadoes) are slightly moist. Loaf and other white sugars should be clear and sparkling, though this is not so true of the cheaper beet sugars.

Of tea and coffee there are innumerable varieties. Tea should be of a good colour (almost black), should

<sup>1</sup> *Food and the Family*, p. 159.

not be too coarse, yet not so fine as to be dusty. It should have a refreshing smell and should be perfectly dry. As tea is much affected by the kind of water available it is a common plan for grocers to stock blends which are suited to the district. If this is not done, the housewife, with a little experiment, can blend her own. A cheap tea, somewhat rough in taste, can be much improved by adding a little of a milder, less forceful kind; and many people, who do not on the whole relish China tea, yet like a little added to the Indian of their particular choice.

Good pure coffee, if it can be afforded, is known by its delicious (though penetrating) smell, and in these days the purchaser can have it freshly ground as she buys it, or, better still, can buy coffee-beans and grind them just before infusion in her own little coffee-mill. Coffee should be bought often, in relatively small quantities.

Cocoa can be bought loose, but is more often put up in packets or tins, and the most important point is to choose a well-known make.

The buying of white and brown bread is so much a matter of taste that it is not easy here to give much useful advice. Well-baked, crusty loaves are the most wholesome, and they should be at any rate one day old in the case of white bread. When cut, they should not be too moist or dense, nor should they show definite holes in the texture. Brown bread goes stale more easily than white and is not so indigestible on its first day. Genuine "wholemeal," with the germ included, is the best form of brown bread except for those who find it too irritating for throat or digestive organs. Such people should make a point of getting their roughage, etc., in other ways.

When all is said and done, both white and brown bread are best bought as flour, but in our time even the Northern housewives, through force of circumstances or for other reasons, seem to be forgetting this fact.

Cakes and pastries are certainly best when made successfully at home. If time for this diversion is wholly lacking, the housewife should choose those confectioners whose goods are most like home-made, and should avoid strong flavours, high colouring, and poor ingredients with a showy appearance.

In buying biscuits, a good make should be chosen, and if it is necessary to buy them cheap it is better to choose crisp broken biscuits by a good maker than whole ones of an inferior quality. Biscuits should not be bought in large quantities unless they are to be used quickly, in which case the whole tin should be bought unopened.

We now have to deal with foods which are more difficult to keep, and these, almost without exception, are also more difficult to choose.

Butcher's meat shows its quality mainly in colour and texture. The lean of beef should be bright red and any blood running from it should be the same. It should look moist and when pressed by the finger should be elastic and tender. The fibres should not look coarse, and the fat, clear and creamy in colour, should be intergrained with the lean besides being found in separate pieces. The lean of mutton is lighter and browner, but should not look dull. The fat is whiter and is not so much mingled with the lean. The flesh should be elastic and tender as before. Pork is more like beef as regards intermixture of fat, but the flesh is of a rather pleasing pink and even the fat has a slightly pink tinge.

Young meat is altogether lighter in colour, and veal, owing to the method of killing, is almost colourless. In general the size of the bones will be some guide to the age of the animal, but it must be remembered that the full-grown mountain sheep of Wales and Scotland is much smaller than the average English variety. For lamb, the presence of skirting fat is often a guide, and in buying liver one knows the difference by the lighter colour of the young meat.

Rabbits can be chosen by size, the clear, bright look of the flesh, and the suppleness of the bones. English wild rabbits are at their best in the weeks following the grain harvest, especially if the smaller ones are then chosen.

Poultry is chosen by the clear, clean look of the flesh with unbroken, unscarred skin, by the plumpness of the breast, and the suppleness of the bones, especially those in the breast and legs. In trussing, the main tendon of the leg shows well whether the bird is young or old.

There are excellent brands of English, Irish, Danish, and American bacon and ham, and at present all are fairly dear. The most expensive rashers are the "short rib" and the least expensive the "flank." In London short rashers of the different kinds are sold separately, but in some towns (e.g. in the Midlands and Wales) it is often necessary to take rashers cut right across the flitch. This on the whole is a good custom since it discourages fads.

"Chaps," or "chawls," as they are sometimes called, provide a fairly cheap substitute for bacon or ham. They can be bought simply pickled, or cured and cooked.

Fish should have a clear bright skin and the scales

should still, in most cases, be abundant. The flesh should not be flabby, the gills should be red, and the eyes bright and prominent. In the herring, pilchard, and mackerel, the iridescent colours of the truly beautiful skin should still be seen, and in the plaice the red spots on the upper side should be fresh and bright. Flat fish should be chosen for their thickness and round fish for their girth.

The ideal way of obtaining eggs is to get them straight from the nest in one's own or a neighbour's hen-house. If this is impossible a dealer should be chosen whose eggs are known to be really new-laid. Of commercial eggs the writer has found the Danish<sup>1</sup> new-laid the most reliable.

Country butter is usually the nicest (e.g. Devonshire, Dorsetshire, Cornish, Welsh), though some varieties, especially in Wales, are a little too salt for the average palate. There are also excellent kinds to be obtained from well-known large dairies, and of the imported butters, Danish, Dutch, New Zealand, and Australian are almost uniformly good. In addition there are many good makes of margarine and mixtures of butter and margarine.

The choice of cheese is generally a matter of taste, and there are innumerable kinds on the market. It will be remembered that it is one of the cheapest sources of good protein and fat, especially if a reliable imported "Cheddar"<sup>2</sup> is chosen. Many kinds of wrapped cheese can now be bought in large or small quantities (e.g. St. Ivel, Little Wilts, Moonraker,

<sup>1</sup> The excellence of the Danish organisation controlling such products is well known.

<sup>2</sup> An American cheese, often called "Cheddar" in imitation of our famous English type.

Kraft, Chedlets, Cheshire, etc.). We shall in any case take care not to buy cheese which has been exposed to contamination through flies, bad air, and so forth.

Fresh fruit is best out of one's own garden or orchard or picked in the open country. Strawberries and raspberries as well as blackberries grow wild within easy reach of London and other large towns, and the pursuit of them brings its own rare delight. If fruit must be bought it is important to make sure that it is unbruised, without flaws and not too ripe. The last precaution applies particularly to small fruit, stone fruit, and pears. Oranges and lemons should be thin-skinned and fairly smooth, and should feel firm and weighty in the hand. Grapes should have their bloom as far as possible unspoilt, especially if English-grown.

All green vegetables should be fresh-coloured and crisp. Larger cabbages are chosen for the size and firmness of their hearts, cauliflowers for the whiteness and tightness of the centre, combined with the fresh green of their leaves; Brussels sprouts should be firm and tight, lettuces should have close firm hearts, whitish if possible, and crisp leaves. Root vegetables should not be dull in colour or flabby to the touch. Onions easily become rotten without showing it on the outside. They should be quite hard when firmly pressed. Spanish onions are general favourites and can usually be bought until the Egyptian onions come in. These are a hard variety and need longer cooking than Spanish. Just as they become plentiful in the English market we begin to get our own spring onions. English onions are excellent, but many kinds when full-grown are a little too strong for some tastes. French and Belgian onions are sold in abundance in the streets of English towns in Autumn.

Perhaps the first and last word in marketing is to emphasise the wisdom of true economy, i.e. to lay out one's available funds to the very best advantage, to have an eye to value rather than mere quantity, to buy in such a way that there is an absolute minimum of waste when we come to use our stores, not to be led astray by false appearances, to insist on being served fairly, and to scorn any unfair dealing on our own part.

## CHAPTER X

### FOOD-STUFFS AND COOKERY

To understand the methods chosen in cookery it is absolutely necessary that we consider the effects of heat and moisture on those food-stuffs which are supplied by common foods. If through ignorance we wrongly use heat and moisture, we not only deprive food of its vital qualities but also make it difficult to digest and absorb, and therefore harmful.

We have already seen that protein is the most important of the food-stuffs, since it is able to replace body tissues part for part. Now it is difficult to find any given food-stuff in isolation because, as a rule, the common foods are more or less complex. White of egg, however, is a good example of protein, olive oil of fat, and white sugar of carbohydrate. Apart from the aid of the chemical laboratory our best plan, therefore, is to look first at the protein found in white of egg. Separated from the yolk its composition is :

				%
Water <sup>1</sup>	.	.	.	85.7
Protein	.	.	.	12.6
Fat	.	.	.	0.25
Mineral Matter	.	.	.	1.09

i.e. it is almost wholly made up of water and protein, and the special name given to the protein is egg-albumin.

<sup>1</sup> The figures are König's, quoted by Hutchison.



By means of a few very simple tests it can be seen that the substance behaves in these ways :

(1) It is soluble in cold water.

(2) It coagulates quickly in boiling water and becomes white, hard, and stringy.

(3), (4), and (5) It is coagulated slightly by weak acid and effectually by strong acid and alcohol.

(6) It leaves a black remnant when burnt, and gives off a certain smell.

If we take a tube in which a little egg-albumin has been dissolved in cold water, and put it into a saucepan of water which is then gradually brought to boiling-point, we can watch the change from the liquid state to complete coagulation, and by means of a Centigrade thermometer we can satisfy ourselves that at a temperature of about  $63^{\circ}$  the substance becomes cloudy and that by the time it reaches  $100^{\circ}$  (boiling-point) it is white and solid.

Allowing that the tube is taking the place of the egg-shell,<sup>1</sup> we may note that even a boiled egg should, in general, be lightly and gently cooked, since the digestive juices find it difficult to deal with hardened, stringy substances; further, we may note that a poached egg should be cooked at a temperature below boiling-point, and that this holds good as a general rule for all egg mixtures.

The effect of acids has an importance when we remember that this substance takes a part in the digestive processes. The more immediate use of the tests with acid and alcohol is to give us a hint of ways in which we may detect the presence or absence of protein in a given food, for it can be shown that

<sup>1</sup> The analogy is not perfect, since the shell is slightly porous.

common proteins always coagulate when in contact with heat, acid, or alcohol.

When we were considering the ways in which food-stuffs were found we noted that lean meat contains a good percentage of protein (Myosin). We may take  $\frac{1}{2}$  lb. of lean beef-steak and cut it into three equal parts. Now take a glass and put into it about 2 tablespoonfuls of cold water. Place one of the pieces of steak on a board and scrape it with a rather dull knife-edge across the grain. Put the soft red material into the water and allow it to stand for thirty minutes, stirring occasionally with a glass spoon or rod and squeezing the solid matter against the side of the glass. Now pass the contents through a filter paper into another glass and test the fluid as we have already tested white of egg. First it will be found that the cold water has taken something from the beef which is soluble and which has coloured the water. In the fluid which has been filtered there are now no solid particles, but yet if a little of this is put into a tube and water is boiled round it we may watch a gradual coagulation of protein, and, testing with acid and alcohol, we may note that the effect is similar to that on white of egg. On such facts is based the preparation of meat-juices for invalids who would be unable to digest meat in its ordinary form and yet are able to get protein even in a fluid so filtered. Further, it may be maintained that any substance, claiming to be a meat-juice but showing no coagulation under the conditions just described, cannot be considered to have value for building tissue, though it probably is useful as a stimulant and appetiser.

If the solid substance left in the filter paper be dropped into boiling water, it will quickly lose most

of the colour left in it and will become hard and tough as coagulation proceeds.

Take what remains of the lean beef and cut it into 4 pieces, as nearly alike as possible in size and shape. Keep one of these as a standard ; steam a second over boiling water for 20 minutes, boil a third for 10 minutes, and fry the fourth in smoking fat for 3 minutes. Now note the results : the three cooked pieces will show a change in surface and colour, a lessening in size and weight, and distinct and characteristic changes in taste and smell. The steamed piece will be least coagulated on the surface and least changed in size and weight. The boiled piece will be a little whiter, a little harder, a little smaller and lighter than the steamed. The fried piece will have a dark brown surface which has become a hardened crust, and it will be a little smaller than the boiled piece, but in taste and smell it will probably, to most palates, be the most attractive of all.

Very similar results would be obtained if four pieces of white fish (e.g. cod) were treated in the same way.

From these experiments we are bound to conclude that cooking on the whole does not help the digestion of protein so far at least as purely chemical changes are concerned. There is, however, the undoubted fact that mankind through the ages has given favour ever more and more to cookery, and it may well be that the digestive juices are made more effective through the skilful cookery even of protein. So we may say that it is able to aid digestion by making food more attractive and by softening much of the connective tissue of meat, fish, etc., so that the fibres more readily fall apart.

Heat and moisture applied in cooking do not affect fat as much as they do protein and carbohydrate. The stages of heating are known as :

1. Melting Point, which varies in different fats.

e.g. Butter	.	.	37° Centigrade
Bacon fat	.	.	48°
Mutton fat	.	.	52°

2. Boiling Point, i.e. the boiling point of any water which the fat may contain.

3. Frying Point, i.e. the point at which all moisture has been driven off as steam ; the fat becomes still and a slight blue haze rises. This point differs in different fats.

4. Decomposition or Burning Point, which also differs in different fats, e.g. olive oil can be heated to a very high temperature without burning.

It will be shown later that the choice of fat in frying depends upon the heating capacity of the fat and the kind of food to be fried.

When fat is used in frying other foods it coats the particles of food with a thick film, so that the digestive juices cannot so easily reach them and thus digestion is hindered. The delay is the more real because fat itself, though in the end almost completely absorbed, is one of the last things to be dealt with by the organs concerned. The chief precautions, therefore, are to moderate the amount of food so cooked and to see that the fat cannot, through being too low in temperature, soak into the food, coating all particles of it. The fat in milk and cream is easiest to digest because of its fine emulsion. Next comes butter in uncooked form, then dripping, and so on, and as a general rule the fat which more easily emulsifies makes less demand

on the digestive processes. In so far as cooking aids in emulsifying fats or in making them more palatable it may be looked upon as beneficial. Apart from these changes it does not increase digestibility except perhaps in softening connective tissues of raw fat and in causing it to melt.

Of the carbohydrates, starch is much affected by heat, especially if combined with moisture. Each tiny starch granule is resistant to the digestive processes owing to its tough outer covering of cellulose. This can be softened and in fact partly changed into sugar by the action of acids and heat, as we actually see it in the ripening of fruits in sunshine.

The dry heat of cooking changes starch into a soluble form and finally into dextrin, which is itself a highly digestible substance. Cold water at first seems to have no effect, though in reality it slightly swells the starch granule, as can be seen in the making of batters. If water be boiled and poured over some laundry starch which has been mixed to a paste with a little cold water, the starch granules burst their covering at a temperature of about  $90^{\circ}$  C. and the starch becomes a transparent gelatinous mass taking up far more room than before. Starch set free in similar ways should be boiled for at least 5 minutes before it can be considered properly digestible. We all know well the raw taste in some examples of blancmange and white sauce.

It follows from this that while cookery is not wholly good for animal foods it is in general a great aid in dealing with vegetable foods, in which starch so often preponderates.

Sugar, even in its so-called "raw" state, has already been subjected to heat and moisture and evaporated

so that it takes its naturally crystalline form. Refined sugar has been remelted, filtered, and clarified, and lump sugar has been run into moulds and cut into small pieces.

Sugar is soluble in cold and more quickly so in hot liquid. If it is allowed to pass slowly from the liquid to the solid state and to collect round a thread it crystallises into those familiar lumps which we know as sugar-candy. If we apply considerable heat and drive off all moisture, it changes in colour and quality into an amber liquid which on cooling does not again crystallise but takes the form of barley sugar. Heated still further, it darkens into caramel which has a characteristic, slightly bitter taste and is much used in cookery. At this stage it is no longer capable of fermentation.

Innumerable kinds of toffee are obtained by boiling as the groundwork sugar and butter in varying proportions. If the boiling is carried too far the substance becomes soft, crumbly, and opaque.

Beet and maple sugar are not chemically different from cane sugar, and it must be remembered that what has been said of the effect of heat and moisture on the latter applies equally to them. Both varieties are much used, maple sugar especially in North America, and beet sugar increasingly so here.

Those parts of sugar which do not crystallise in the manufacture of the commercial article are known to us as treacle, golden syrup, and molasses.

## CHAPTER XI

### SOME WAYS OF COOKING

THERE are many most valuable cookery books now obtainable, and at this point we would urge the reader to consult her favourite volume for details of the subject, as this book does not in any way set out to give a course in cookery. Yet at the same time it is necessary to glance at the foundation principles underlying the theory and practice of all types of cookery.

While we are mainly concerned with the effect of heat and moisture on food-stuffs, we must not forget that a cook's work also includes much that does not call for the application of these things and yet has an important place in diet. Some enthusiasts, in fact, would almost abolish cookery and take us back to the habits of primeval man. Even though we may not wish to follow such teachers we still shall admit the value of such things as salads, salad dressings, preparation of fresh fruit (e.g. grape fruit), the making of some sweets and beverages, the preparation of one kind of beef-tea and of raw meat for the anæmic, etc.

As our definition of cookery, therefore, we might say that it includes all those processes through which, after foods are bought, they are made suitable for consumption by human beings in health or sickness.

Turning aside now from those comparatively rare cases which do not involve actual cookery, we may say that the chief reasons for employing heat and moisture are :

(a) To give food a temperature which the body approves. Thus we choose hot food in winter and cold in summer.

(b) To make mastication easier. Obviously it may sometimes be made too easy by cooking or overcooking.

(c) Partially to sterilise by destroying parasites or micro-organisms.

(d) To make the appearance more appetising.

(e) To give greater variation by developing new flavours and combining flavours new and old.

The most important processes in cookery are as follows :

1. Steaming.
2. Boiling.
3. Stewing.
4. Roasting } (a) True Roasting.
- } (b) Baking.
5. Frying.
6. Grilling (Broiling).

Together with a few others (e.g. the scrambling and coddling of eggs, the braising of meat) which hardly find a place in the above classes.

1. Steaming is a means of cooking by moist heat, the food being subjected either directly or indirectly to the steam rising from boiling water or other liquid. Practically any kind of food can be cooked with advantage by ordinary steaming except perhaps bread, certain kinds of pastry, and some vegetables. We use it regularly with butcher's meat, game, poultry, rabbit, eggs, fish, vegetables of many kinds, cereals, pulses, puddings (including batters and custards), suet pastry, soufflés, etc. As it is especially valuable for weak digestions we shall find it again and again in invalid recipes (Part II).



2. Boiling is chiefly used for butcher's meat, bacon, ham, game, poultry, fish, eggs, cereals in general and dishes containing them, soups, sauces, vegetables, fruit (e.g. jam), etc.

3. Stewing is used for butcher's meat, rabbit, fish, vegetables, fruit (fresh and dried). When it is carried on in an oven instead of over a light or on a coal range, it practically merges into baking, except that the name is given only when the food is cooked gently in some kind of fluid.

4. Roasting. This term strictly belongs to a form of cooking which involves the direct use of radiant heat, as in the roasting of an ox at some old festival or the cooking of the family sirloin, as it was so often done in Victorian days, suspended by means of a "jack" and turning in front of a glowing fire, or as it is still occasionally done in a dutch oven in front of a coal fire or even a good gas heater. In these days, however, when we speak of roasting we are usually thinking of oven roasting by coal, gas, or electricity. Here it is practically the same as baking, though the term roasting is generally used only for those things which are baked practically without fluid.

Roasting (or Baking) is used mainly for butcher's meat, bacon, ham, sausage, fish, apples, potatoes, tomatoes, puddings (including batters), bread, all common kinds of pastry, cakes, biscuits, soufflés, etc.

5. Frying is used mainly for small pieces of butcher's meat, bacon, ham, kidneys, liver, eggs, vegetables (e.g. when preparing them for soups, brown stews, sauces, and curries), fritters, pancakes, rissoles, cutlets, some omelets, etc. Most of these can be cooked in either shallow or deep fat, and the fat is an absolute necessity as we shall show later.

6. Grilling is used for thin pieces of butcher's meat (e.g. steak, chops), bacon, ham, sausage, kidneys, fish, tomatoes, etc. It is also used for giving quickly a brown surface to such things as cauliflower *au gratin*, macaroni cheese, etc., and in the same way it may be used to finish off a boiled milk pudding.

#### I. RULES FOR STEAMING

(i) As far as possible, the steamer should be suitable in size and shape to the article which is to be cooked. Many varieties can be bought, but a cheap and good kind is the ordinary potato steamer with a lid and saucepan to fit well. Two or even three steamers can be used one upon another, and the saucepan may be of tin, iron, aluminium, etc.

(ii) If long steaming is necessary the saucepan should be almost full at the beginning and the water should be replenished from time to time from a boiling kettle. Usually the water should be boiling when the food is put into the steamer, though this is not always necessary (e.g. when reheating food and when steaming whole rice, plain or with milk).

(iii) The amount of steam must be carefully regulated by increasing or lessening the actual bubbling of the water. Gentle steaming is necessary for protein, especially that of eggs, but foods in which carbohydrate or fat predominates will stand more vigorous treatment. Delicate custards and other light egg mixtures are only too often spoilt by an overdose of steam.

(iv) As a general rule food should be protected from condensation of steam by a covering of watertight greased paper or by being enclosed in some vessel with a watertight cap of metal or greased paper. With the

latter a cloth is also sometimes used. A second advantage of the greased paper is that it keeps out to a very great extent the flavours of other foods in the same vessel.

(v) Steaming in comparison with other methods is a long process, and sufficient time must always be allowed. Often, for instance, the satisfactory steaming of a chop will take fully twice as long as boiling it.

(vi) The chief precautions in dishing and service are the careful guarding of food juices and the skilful use of sauces and garnishing for dishes which otherwise do not look attractive.

The advantages of steaming have already revealed themselves, but they may be summed up thus : it is an admirable method for weak digestions as it renders food light, soft, and easily dealt with by the digestive juices ; it involves very little risk of overcooking and little loss of the actual substance and distinctive flavours ; it is economical as regards fuel, attention, and wear and tear of apparatus. The disadvantages are only slight : it is a fairly lengthy process and there is sometimes a little difficulty in the matter of seasoning.

There are two quite satisfactory compromises for true steaming :

(a) Putting the food between two plates over boiling water, or between a plate and the saucepan lid, or even between two lids, the lower one inverted.

(b) Using a jar (or jars) with greased paper caps and allowing them to stand in boiling water (see Chapter II).

## 2. RULES FOR BOILING.

(i) Choose a saucepan suitable in size, shape, and material. It is important that there should not be too

much liquid and that an enamel lining or aluminium should be used for food of which the colour is easily spoilt, e.g. white meats, some vegetables, and fruits.

(ii) As a general rule, after a short spell of boiling at the beginning, the movement is reduced practically to a simmer, though vegetables, pulses, cereals, and some fruits (e.g. in jam making) need a rather faster boiling. Cereals must be stirred often to prevent sticking and burning.

(iii) The fluid in which the food is boiled should be suitably seasoned in such a way that the flavours enter fully into the chief materials.

(iv) Always with meat and sometimes with other things (e.g. jam) any scum should be taken off. With meat this should be done when the scum first rises and before any vegetables are put in.

(v) Almost invariably there are extra ingredients, e.g. vegetables, etc., with meat; sugar and flavourings with milk puddings; sugar with fruit. These do not always need the same treatment as the chief ingredient and must be dealt with according to their nature. With boiled meat and fish a sauce is usually served which is made either independently or with some of the fluid used in boiling.

(vi) The water or other fluid, after being regulated, must not be allowed to become cooler. This is particularly important with vegetables.

(vii) The time of boiling varies greatly with the material. For average fresh beef and mutton allow about 20 minutes to the pound and 20 minutes over. Salt beef, bacon, and ham need a little longer, as also do veal and pork. An average tender fowl needs about 1 hour and a rabbit 1-1½ hours. Fish on an average needs about 10 minutes to the pound and 10 minutes

over. Vegetables need from 10 to 60 minutes,<sup>1</sup> according to size, age, texture, etc. Whole cereals need about 1 hour, ground cereals from 20 to 40 minutes.

(viii) The points for dishing and service are practically the same as with steaming, since boiled food also is not particularly attractive in appearance or flavour.

### 3. RULES FOR STEWING.

(i) As before, the choice of the utensil is important, and here the casserole is especially suitable. With care it is clean and economical in use and has the further advantage of not changing the colour or flavour of materials cooked in it.

(ii) Even less liquid is needed than for boiling, e.g. for meat stews  $\frac{1}{2}$ – $\frac{3}{4}$  pt. of water to the pound is sufficient, especially if vegetables are included which themselves add to the gravy. Fresh fruit needs  $\frac{1}{4}$ – $\frac{1}{2}$  pt. of water and 2–4 oz. of sugar to each pound, while one pound of dried fruit will take a quart, and apple rings as much as 3 pts.

(iii) For meat stews cold water should be poured over the meat and the stew should then be brought gently to simmering point and gently simmered throughout the cooking. Any scum should be taken off as it rises. In the case of fruit, the water and dissolved sugar should be boiled rapidly together for 7–10 minutes, and when the syrup is thus made the fruit should be put into it and simmered very gently until cooked through. Great care should be taken not to break the fruit.

(iv) The times for stewing vary greatly with the

<sup>1</sup> A large Spanish onion, boiled whole, late in the season, does not soften in much less than an hour.

material, e.g. really good cooking apples can often be done in 7-10 minutes, whereas an ox-tail may take 7-8 hours. Long stewing, however, can be interrupted if necessary and even finished on the second day without harm.

(v) Stews do not usually need any additional sauce, though garnishing is often added, e.g. chopped parsley, with haricot mutton, and Irish stew. White stews are usually thickened with flour, mixed smooth with a little water or milk, and added 5 minutes before dishing. Brown stews, besides having their ingredients slightly fried, are thickened with browned flour before the water or stock is added. Success in dishing meat stews lies mainly in the skilful arrangement of meat and additions, and the choice of a dish deep enough to take the gravy, which should be particularly rich and good, and perhaps the chief attraction of the stew.

Stewing of meat is a particularly economical process for many reasons: the cheaper parts can be used; the meat and vegetables lose less than by any other method save steaming, for the juices extracted are all served in the gravy; little fuel and attention are needed. The length of time necessary is perhaps a slight disadvantage, and just occasionally a stew (e.g. haricot mutton) is a little too rich for some digestions, but on the whole the method can be warmly recommended, especially for the poorer homes. One other point must be mentioned, namely that stewing is not really favourable to Vitamin C, which therefore should be supplied in some other way on days when stews are chosen.

Fish, celery, artichokes, fresh and dried fruit are all suitable for oven stewing as well as ordinary stews of mutton and beef. Of these, hot-pot is a good example.

The hay-box may be used with advantage for partly cooked stews, and is especially convenient for those who must needs leave much of their cooking to look after itself.

#### 4. RULES FOR ROASTING AND BAKING.

(i) Genuine roasting, as we have seen, is still sometimes done. For large joints of meat a "jack" is necessary, supplied with its own special pan and a reflecting screen. For small articles the dutch oven is suitable. This is supplied with hooks for bacon, etc., and a reversible back which gives again the necessary reflecting surface. For oven roasting of meat an open double tin should be used either specially bought for the purpose or improvised by fitting one upon another. The lower tin should be kept supplied with water, which helps to prevent the fat from burning and, incidentally, to ensure good dripping. The joint itself should rest upon a grid, or some other simple device which serves the same purpose, i.e. to give air to the joint and raise it out of the fat.

(ii) A joint should have considerable heat for the first 10 minutes so that coagulation of the surface may seal in the juices. Afterwards the heat may be reduced and towards the end of the roasting may be very low.

(iii) Meat must be kept well basted, so that the surface may not burn or become dry. Before putting beef into the oven some housewives prefer to sprinkle it with seasoned flour. Unless a joint is very fat, knobs of dripping should be placed upon it so that there may be plenty of basting fat at all stages.

(iv) If cooked with a jack the joint is kept constantly

turning. With the dutch oven the back must be duly turned over and the oven reversed. In ordinary oven roasting the joint, unless very small, will need to be turned when about two-thirds of the time has elapsed, and the heat raised again for a few minutes.

(v) Times of roasting vary greatly with the kind of thing which is being cooked, and many other conditions such as size and quality in meat, thickness, amount of bone, etc. Approximate times for meat are :

Beef	}	20 minutes to the lb. and 20 minutes over.					
Mutton							
Pork	}	25	"	"	25	"	"
Veal							
Poultry	}	15	"	"	15	"	"
Game							

(vi) In the dishing of roast meat the gravy is of much importance. The orthodox type for a roast (unless stuffed) is thin gravy, made simply with water and seasoning added to the juices in the tin, but many people prefer a gravy slightly thickened with flour. In either case, all superfluous fat must first be poured off, though for thick gravy a little may be left in the tin for the browning of the flour.

(vii) So far we have dealt mainly with meat as being the most important item in roasting. Pastry needs a hot oven, especially for the first few minutes, batter a good heat for the greater part of the time. Many cakes, especially small ones, need moderately good heat, large cakes need it at the beginning. Apples, tomatoes, and potatoes need fairly gentle, and custards very gentle baking. Fish baked in milk comes practically under the rules for stewing, as do also vegetables and fruit cooked in an oven. Baked stuffed



fish is a pleasing variety. Milk puddings are important, but will be treated in another place.

Roasting on the whole is a fairly extravagant method and tends to give rather rich food, but for flavour, delicacy, and general attractiveness it is deservedly popular and will probably always hold its own.

## 5. RULES FOR FRYING.

There are four chief methods :

A. By extraction of fat from a food so that the food may be cooked in it, e.g. bacon, liver and bacon, sausage.

B. With a small quantity of added fat, just enough to cover the pan, as with egg dishes such as pancakes, fritters, drop scones.

Fried eggs need more fat.

C. With shallow fat, as with meat- and fish-cakes. The fat should be about half the depth of the food to be cooked.

D. French or deep fat frying. This can be used in most cases.

A, B, and C may be grouped under the general name of Shallow Fat Frying.

The most important rules are as follows :

(i) Attention must be given to the kind of pan. For shallow frying it may be of iron, steel, aluminium, etc., or it may be enamelled. The common shapes are round and oval, the latter being usually more suitable for fish. A special type with bevelled sides is made for omelets and should be reserved for that use. For French frying a strong saucepan of seamless steel should be chosen, and either a frying basket to fit it or one of the various kinds of frying "slices" or spoons.

(ii) The pan, for every reason, must be absolutely

clean and it is often necessary to "prove" it, i.e. a little common salt is heated in it and rubbed over it with clean soft paper. This is repeated until there is nothing on the surface of the pan which can turn the salt brown, and the salt is then completely cleared away.

(iii) <sup>1</sup> The choice of fat depends upon the nature of the food to be cooked and the heating capacity of the fat. Fats with a low capacity (e.g. butter, margarine) may be used for fried and scrambled eggs; lard (also low) for egg mixtures; clarified dripping for ordinary frying of food already cooked. Rendered fat, made at home or bought in the block, is used for such things as meat- or fish-cakes or for fish or thin pieces of meat. Oils are capable of extreme heat and are far the best for deep fat frying. Olive oil is the most satisfactory, but cheaper kinds of vegetable oil are fairly good substitutes as well as clarified and rendered fat.

(iv) A coating is often used for food which is to be fried: its purpose is two-fold, viz. to keep in the essential juices, etc., of the food, and to protect it from the too rapid penetration of heat. The most common varieties are:

- (a) Egg and bread crumbs.
- (b) Batter (sometimes made without egg).
- (c) Pastry.

The best coating for fritters is a batter made with flour, oil, tepid water, and white of egg ("Kromeski" batter).

(v) Frying should not be left unattended even for a minute. A thing well fried should be crisp and, if the material admits it, golden brown in colour. This applies particularly to coated food.

<sup>1</sup> See Chap. X.

(vi) As the food is taken out of the hot fat it should be drained on clean crumpled porous paper and served quickly on a paper d'oyley. This does not of course apply to such things as fried or scrambled eggs.

Frying is a quick process if we ignore the time necessary for clearing up. It is not particularly economical nor is it to be recommended for weak digestions, but its appeal to the palate is usually irresistible.

#### RULES FOR GRILLING.

(i) If this is done over an open fire, a gridiron or at least a suitable frame of wire is needed. More often in these days it is done under the griller of a gas-stove, and we need for it a tin to catch fat and juices, and a stand with bars on which to rest the food.

(ii) Before exposing the food to heat it should be brushed over with fat or have little knobs of fat placed upon it. Seasoning should also be added.

(iii) A high temperature is kept throughout. With meat or fish this quickly gives a coagulated surface and keeps in the juices. Any cut surfaces should be first exposed, turning should be frequent, and all piercing should be avoided.

(iv) Grilling is a quick process, and meat when finished should be well-browned though not burnt, should have a slightly puffy appearance, and should be elastic to the touch. A rich red gravy should quickly flow out when it is cut.

(v) The main point in dishing and service is to have the dish very hot and to serve at once, as the heat of the food obviously will very quickly be reduced.

Grilling, like frying, gives a very rich flavour, but is not really economical, except that in preparing small

dishes it often saves the use of the oven or other parts of a gas-stove.

It may occur to some readers that there are fairly common ways of cooking not dealt with in the above classes. Such are :

The scrambling of eggs. This is perhaps most like frying, but closely approaches stewing as soon as the fat is thoroughly blended with the beaten egg. This is the more true when a saucepan is chosen instead of a frying-pan.

The coddling of eggs. This consists in putting the eggs into boiling water, covering the saucepan, drawing it away from the heat, and taking out the eggs after ten minutes or more.

The braising of meat, etc. Literally this is to cook "à la braise," where braise is the name for hot charcoal.<sup>1</sup> In other words, the meat is surrounded with slices of bacon, herbs, etc., and is stewed in a tightly closed pan, strictly with glowing charcoal above and below. It is thus a compromise between stewing and roasting, and in England our modern method is to use<sup>2</sup> a stewpan or casserole, to carry out the first part of the process over the fire or gas, and the second part in the oven.

The following matters also show overlapping and seem to call for a little special notice, viz. Stocks and Soups, Sauces, Raising Agents, Bread, Pastry and Cakes, Milk Puddings.

### Stocks.

Stock is a liquid obtained by boiling meat and bone, or fish or vegetables, or vegetables mixed with meat

<sup>1</sup> See Murray's English Dictionary.

<sup>2</sup> See Nash : *Cooking Craft*, p. 125.

or fish. It holds the flavours of these ingredients, most of the mineral matter, and the extractives. Much of the connective tissue, some fibre, and the animal part of bone and gristle, all converted into gelatin, are there also. A little coagulated protein and some fat rise to the surface, and can be skimmed away or the fat can be taken off when cold.

Stock is used, according to its varying nature, as a foundation for soups, sauces, gravies, curries, etc. For clear and for rich thickened soups first stock is needed and is made as follows: bones are put on with cold water and salt, and allowed to simmer for four or five hours, and the liquid is then strained off. For second stock the bones are covered again with cold water and boiled rapidly for five or six hours. When they begin to look perforated they are no longer useful for stock.

#### KINDS OF STOCK.

1. Meat.
2. Fish.
3. Vegetable.
4. Household.

1. This may be made of meat alone or with bones and gristle added, allowing about 1 lb. to 1 quart. of water.

2. This is similar to the preceding, fish taking the place of meat.

3. This is made from vegetables only and is much used in vegetarian recipes.

4. This is the most common kind of all, and as there is little restriction of ingredients many household remnants may serve to enrich it.

1, 2, and 3 are sometimes made exclusively with

materials which give no definite colour and are then known as "white stock." For this we may use knuckle of veal, chicken, rabbit, white fish, milk, white vegetables, etc.

In making stock, one should take care that all ingredients are fresh and good, that utensils are absolutely clean, and that all bone is well chopped. It should be strained, when finished, into an earthenware bowl, and in hot weather should have a daily boiling.

### Soup.

Soup is a liquid generally made with a foundation of stock and the soluble parts of a great variety of ingredients. It may be thickened by using part or the whole of the insoluble parts or by the addition of starchy materials, etc. The liquid part stimulates appetite, the thickening gives nourishment also.

We may classify soups in two distinct ways, viz.:

I. Meat	II. Fish	III. Vegetable
and A. Clear	B. Broth	C. Thick
		a. Purée
		b. Thickened with starch, egg, etc.,

and it will be seen that there is still a certain overlapping, e.g. clear soups are usually made with meat, but could be and occasionally are made with a foundation of clear fish stock. Broths usually have meat, often combined with vegetables, but sometimes they are made with fish as in eel broth. A thick soup, though generally made with vegetables, may also include meat or fish.

For meat and fish soups, allow  $\frac{1}{2}$  lb. to 1 pt. of water or stock. For dry vegetables (e.g. peas, lentils), allow

$\frac{1}{4}$  lb. to 1 pt., for fresh vegetables, 1 lb. to 1 or  $1\frac{1}{2}$  pts. When meat is used it should be cut into very small pieces and, if possible, soaked for  $\frac{1}{2}$  hr. in cold water, then cooked very slowly for a long time.

In all soups the flavour of the chief ingredients should assert itself despite the fact that many other flavours may be blended with it. For instance, celery (whether in natural form or as seed or salt) is an invaluable flavouring in many soups, but should be distinctly tasted only in celery soup.

All soups should be well seasoned and free from surface fat. When fat is notably deficient, as often in vegetable soups, it may be supplied by frying the vegetables before the stock is added, or a little fat bacon or ham or even bacon rind may be used, or the soup may be served with small dice of bread, fried in hot fat (croûtons).

In purées the solid material, when thoroughly cooked, is passed through a sieve and combined with the liquid and is then kept in suspension by adding a little flour or cornflour.

The food value of many soups is increased by the addition of a little milk or cream or beaten egg. The last two are often used for thickening when starch is not allowed, as in many cases of diabetes.

The great value of soup in the diet is too little realised. Even clear soups encourage appetite and stimulate nervous force. Gelatin in the stock acts as a protein sparer and there are usually, in addition, other energy-giving foods and mineral salts. A good soup is easily digested and all these benefits can be won with economy. The common dislike for soups in many homes is probably due to the fact that they are too often watery and flavourless.

## SAUCES.

In every kind of cookery, sauces add great value to food and we cannot afford to neglect them. The kinds are innumerable, but they usually fulfil at least one of the following purposes :

(1) They supply some nutrient which would otherwise be lacking.

E.g. Maître d'Hôtel Butter with white fish, which is deficient in fat.

(2) They give richness and flavour to food which otherwise would be insipid.

E.g. Caper Sauce with boiled mutton.

(3) They help to take off undue richness.

E.g. Apple Sauce with roast pork.

(4) They improve appearance.

E.g. Coating Sauce with vegetables.

The matter of classification is not easy on account of overlapping, but a few of the best-known sauces are grouped below : <sup>1</sup>

## WITH FISH.

1. White Sauces, e.g. Plain, or with Egg, Anchovy, Mussels, Shrimps, Parsley, Mustard.

2. Gravy.

3. Dutch.

4. German.

5. Parsley and Butter.

6. Maître d'Hôtel.

7. Mustard (another kind).

8. Mayonnaise (with or without salad).

<sup>1</sup> Recipes will be found in any good cookery book.



## 114 FOOD VALUES IN PRACTICE

### WITH MEAT, POULTRY, ETC.

Several of the above, e.g. Plain White Sauce, Parsley, Gravy, Maître d'Hôtel. In addition, we have :

1. White Sauce with Capers, Horse Radish, Onion.
2. Tomato.
3. Piquante.
4. Curry. (This is used also with fish, eggs, vegetable, etc.)
5. Mint.
6. Apple.
7. Bread.
8. Brain.

### WITH VEGETABLES.

1. White Sauce, either Plain or with Cheese or other additions.
2. Melted Butter.

### WITH PUDDINGS.

1. Plain White Sauce with Sugar, or with Brandy or Rum in addition to Sugar.
2. Jam.
3. Custard.
4. Cornflower.
5. Chocolate.
6. Lemon.

### RAISING AGENTS.

It is a practice almost invariable in modern cookery to lighten or raise any food which has flour in any form as its main foundation. Thus, before we can

thoroughly grasp the methods used in the making of bread, steamed and boiled puddings, pastry, cakes, etc., we need to look into this matter of raising agents. Those in common use are :

- A. Ordinary Air.
- B. Gas.
- C. Fat.

One of these or a combination of two or even three must be introduced in the process of mixing, according to the special work in hand.

A. One way of entangling ordinary air is to pass the flour through the fingers or a sieve and then in mixing to let it fall lightly from the fingers into the bowl. Or air may be introduced by prolonged beating after adding water, milk, or, still better, egg as well. This is the method used in making batters.

B. The chief ways of using a gas are by means of yeast or ordinary baking power, or an acid such as that of vinegar, sour milk, lemon, etc., blended with bicarbonate of soda.

C. Fat is a shortening rather than a raising agent, but, combined with gas or air or both, it gives a light or raised pastry, cake or pudding. The chopping or rubbing in of fat introduces air, as also do the special methods employed in making flaky or puff pastry.

A further word about yeast<sup>1</sup> may be given here : any dough made of flour and water, if exposed to air in a suitable temperature, will inevitably be attacked by wild yeast spores because the dough itself has a ferment which turns a certain amount of starch into sugar and because this sugar attracts the spores floating lightly in the air. Yeast cells rapidly develop,

<sup>1</sup> See Chap. VIII.

fermentation increases, and the sugar is broken up into alcohol and carbonic acid gas. This natural process may be quickened by blending commercial or cultivated yeast with a little extra sugar and some tepid water.

Cultivated yeast is obtained from wild yeast by ridding it of impurities and giving it a more convenient form. It is best known in three varieties, viz. (i) brewer's yeast or barm, which rises as froth on the top of beer, (ii) compressed or German yeast, obtained from distillery vats, purified by washing, compressed and kept at a low temperature, (iii) dried yeast, which is similar to the preceding, but is dried by mixture with starch before compression.

In bread making, yeast fermentation is combined with bacterial action, and the special quality of the bread will to some extent depend upon the interrelation of these two things. If bacterial action is unduly emphasised, the bread will have a sour taste; if yeast fermentation is allowed to dominate, the bread will probably cease to hold its moisture well.

The conditions for the proper development of yeast cells are :

(a) Even warmth as distinct from great heat on the one hand and sudden cooling on the other.

(b) The presence of sugar for the feeding of the cells.

(c) Moisture.

Hence the ordinary process of making a quartern loaf is as follows :<sup>1</sup>

Take  $3\frac{1}{2}$  lb. flour.                      1 teasp. castor sugar.

$3\frac{1}{2}$  teasp. salt.                       $1\frac{1}{2}$  pts. tepid water.

1 oz. yeast.

<sup>1</sup> See Nash : *Cooking Craft*, pp. 271-2.

Sieve the flour and salt into a warm basin and place it near the fire. Cream the yeast and sugar in a warm basin. Add the tepid water. Make a well in the flour, strain the yeast, etc., into it and sprinkle a little flour over the liquid. This prevents evaporation and quickens activity. Cover the basin with a clean dry cloth. Put the mixture to rise in a warm place away from draught for about 20 minutes. This is known as "Setting the Sponge," and may be omitted if time is lacking.

Mix well and knead lightly. Cover the dough and leave it to rise for  $1\frac{1}{4}$ – $1\frac{3}{4}$  hours if possible. Form into a loaf (or 2 loaves). Fill warm floured tins two-thirds full. Press well into the corners, and set in a warm place to prove for 15 minutes. This is needed, because fermentation has been hindered by removal from warmth and by kneading.

Use a quick oven at first and when the bread is well risen and slightly browned reduce the heat.

## PASTRY.

In all the more common kinds of pastry we depend for lightness mainly upon fat and the suitable entanglement of air, which, like other gases, expands with heat. A great variety of fats may be used, e.g. butter, margarine, beef dripping, lard, vegetarian fat, or a combination of two or more, e.g. a harder with a softer fat. For a moderately good pastry a useful working rule is to take one part by weight of fat to two parts of flour, though the proportions depend somewhat on the richness of the fat and on individual taste. Baking powder is not really necessary unless the proportion of fat falls below one part in three. Many people, however, prefer to use a little.

The most common kinds of pastry are :

1. Suet, which is useful for many purposes, e.g. as dumplings with boiled meat, as a crust for steamed or boiled fruit puddings, as a plain pudding eaten with jam or syrup, as a foundation for more elaborate steamed or baked puddings.

2. Short, which is suitable for practically every common kind of baked pie or tart and for combination with other ingredients as in custard tarts, West Riding pudding, Bakewell tart, etc.

3. Flaky, used chiefly with meat, e.g. in steak-pies, sausage-rolls, etc.

4. Rough puff, also used chiefly with meat as a substitute for the preceding.

In all these, the main points are carefulness in mixing, coolness, restriction of the amount of water, light handling and rolling, careful regulation of heat. Some hints on mixing and cooking have already been given.

## CAKES.

Of making many cakes there is no end, but we may centre our main division upon the point whether flour or egg ranks first in the mixture. If the former, then the use of fat is an important matter, whether rubbed in, creamed with sugar, or melted ; if the latter, air becomes all-important and fat may even disappear. Yeast mixtures, egg-white mixtures, chou pastry (as in *éclairs*), biscuits are interesting and much used, but need not be dealt with here.

Endless varieties may of course be achieved as other ingredients are added, and the excellence of the cake will largely depend upon the ways in which these are blended. Another means of variation lies in the size

of the cake : the same mixture may be used for large or small cakes with a distinct difference in the result.

As in pastry-making, very much depends upon the lightness and speed of the mixing, on the consistency of the mixture, and on careful baking. For scones and small cakes not baked in tins, the mixture should be a very little less stiff than pastry ; rock cakes should be just too sticky to handle, but should wholly keep their shape on the baking-sheet. A plain mixture for a large cake should be only slightly softer than this, and rich egg mixtures should be just soft enough to pour from the bowl.

It is very important to apply heat before the activity of the raising agent has time to waste itself. For this reason, in a floury cake the baking powder should, as a rule, be added at the last possible minute before the fluid is poured in, and in one with a large proportion of egg, the beating should continue until the cake is ready for the tin.

### MILK PUDDINGS.

The name is usually given to those puddings in which the characteristic ingredient is some form of cereal, cooked in milk with suitable seasoning and flavouring. The blending of food values is particularly good, because milk, while having protein, fat, and sugar, is deficient in starch. To give greater food value and pleasure an egg is sometimes added.

The chief variation in method and proportions arises through the different forms of cereals. Hence we note three well-known methods :

A. For whole or large grains, e.g. rice, barley, tapioca (rough lump or pillule), sago (pillule) : allow the grain to steep and swell in the milk for about  $\frac{1}{2}$  hour;

add sugar, a pinch of salt, and flavouring if desired, and bake in a greased pie-dish in a cool oven for at least 2 hours. A crushed grain such as creamed barley, flaked rice, naturally will not take quite so long.

B. For smaller grains, e.g. seed tapioca and sago, tapioca groult, semolina, ground rice: sprinkle the grain into boiling sweetened milk and continue boiling gently for about 15 minutes, stirring often. Pour into a greased pie-dish and bake for about 30 minutes.

C. For powdered cereals, e.g. cornflour, arrowroot, etc.: mix the cereal smoothly with a little cold milk. Boil the rest of the milk, adding sugar as soon as it is hot. Pour it over the paste, stirring well. Put the mixture back into the saucepan and boil gently for 5 minutes, still stirring well and making sure that no lumps are formed. If needed as a blancmange, pour into a mould which has been rinsed with cold water. If the pudding is to be eaten hot, place it under the griller for a few minutes or brown it lightly in the oven.

Suitable proportions are :

$$\text{but } \left\{ \begin{array}{l} 1\frac{1}{2} \text{ oz. cereal} \\ 1\frac{1}{4} \text{ oz. cornflour} \\ 1 \text{ oz. arrowroot} \end{array} \right\} 1 \text{ pt. milk. } 1 \text{ oz. sugar.}$$

For moulds, rather more of the cereal may be used, as in making them there is less evaporation of moisture than in baking.

An egg, either whole or with yolk and whisked white, added separately, is a good addition to any of these puddings. A flavouring is also often used. If in solid form (e.g. lemon rind, vanilla pod, cinnamon stick, mace), it should be boiled in the milk and removed later, but essences should be added just before dishing or before putting into the oven.

## PART II





## INTRODUCTION

FOR this section a number of recipes have been chosen and grouped in such a way as to be suitable for common use in health and certain forms of sickness. They are by no means exhaustive and they are not in any sense meant to take the place of cookery books, but rather to suggest ways of using such books with greater insight.

As a rule, the amounts are more than enough for one person, because in so many cases the same recipes can be transferred, as they stand or slightly modified, to other diets. For a like reason the groups show some overlapping, e.g. many recipes in the group for the ordinary household might appear in vegetarian diet; many planned for a fattening diet might be used in convalescence; many suitable for constipation might be put into the household group, and so on.

Although numerous recipes are taken from well-known sources we have not hesitated to change them, both in substance and wording, if in this way they could be made more suitable to our need. At the same time we have tried to leave to them as far as possible their own characteristic nature. The oldest of all have been left in their own quaint form as it seemed a pity to modernise them.

In invalid diets, the first and most important point is obedience to the doctor, if there is one in attendance. There is, however, such a thing as an intelligent carrying out of his orders, which can come only from an understanding of food principles and their necessary modifications in illness. This will

include a knowledge of the ways in which cookery affects food-stuffs. Attention to all these points should ensure suitability in the nature of the food, in balance of food-stuffs, methods of cooking, amounts given, times of giving, etc. Often it is possible to tempt a feeble appetite by giving very small amounts at the outset and then persuading to a second serving. This is particularly effective with sickly or fastidious children.

It is not, however, enough that food should be suitable in the ways described. Every possible device must be used to make it also attractive. There must be daintiness and delicacy in cooking and service; cleanliness, simplicity and charm of equipment; variety in choice, the element of surprise, a skilful blending of colours, e.g. in china, glass, use of flowers and even in combination of foods. Invalid food is only too often insipid in all these ways. Lastly, the tact and bearing of the one who gives food can make almost more difference than anything and can tend towards a sort of natural faith healing.

The matter of beverages is so important in invalid diets that we have included a special group of recipes.

The letter written in brackets against the title of a recipe shows the source, thus :

- B.      .    Battersea Polytechnic : *Household Cookery Recipes.*
- Ec.     .    Battersea Polytechnic : *Economical and Appetising Dishes.*
- M.      .    Morton : *Invalid Diet.* (Heinemann.)
- A.T.D.S.    Association of Teachers of Domestic Subjects : *Cookery Book.*
- C.      .    Carnegie House : *The Mothers' Cookery Book.*

- R. . Rae.<sup>1</sup>  
E. . Einhorn : *Lectures on Dietetics*. (W. B. Saunders Co.)  
D.T. . Mrs. Wetherell's recipes in *The Daily Telegraph*.  
S. . St. Barnabas' Home, Southwold: *Economical Recipes*.  
G. . Rev. G. R. Gleig, M.A. : *Domestic Economy*. (pub. 1861.)  
A.N. . "Marthe's" recipes in the Army and Navy Stores Circular.

<sup>1</sup> A most valuable little book published during the War. Exact title not remembered.



## SELECTED RECIPES

### CHAPTER I

#### FOR THE NORMAL HOUSEHOLD

##### POTATO SOUP (B.)

1 lb. potatoes, 1 onion, 1 stick celery, 1 oz. dripping,  
1 tablesp. flour,  $1\frac{3}{4}$  pts. water,  $\frac{1}{4}$  pt. milk, seasoning.

Cut up the vegetables into very small pieces, fry them slightly in the dripping, add the water and seasoning and simmer for 1 hour. Press out the lumps with a wooden spoon against the sides of the pan. Mix the flour to a smooth paste with the milk, stir it into the soup and boil for 5 minutes.

##### FISH SOUP (B.)

1 small cod's head, 1 quart. water, 1 onion, 1 carrot, 1 oz. flour, seasoning, 1 gill milk, 1 teasp. chopped parsley.

Remove the eyes, wash and wipe the head, cut it into quarters and tie in muslin. Cut the vegetables into small dice. Put the fish, vegetables, seasoning and water in a pan and simmer for 1 hour. Take out the fish, separate the flesh, cut it into small pieces and return to the pan. Mix the flour to a smooth paste with the milk, add it to the soup, boil for 5 minutes and serve with chopped parsley.

## LENTIL SOUP (B.)

1 gill lentils, 1 pt. cold water, 1 onion, 1 carrot, 1 turnip, 1 stick celery, mixed herbs,  $\frac{1}{2}$  oz. dripping, seasoning, 1 teasp. flour, 1 gill milk.

Wash the lentils and soak them overnight in the water. Strain off the water for use later, cut the vegetables into thin pieces and toss them and the lentils in hot dripping. Add the lentil water, the herbs and seasoning. Bring to boiling-point, cover and simmer until the vegetables are quite soft, stirring from time to time. Rub all through a sieve and return to the rinsed pan. Mix the flour smoothly with the milk, add it to the soup, and stir and boil for 5 minutes. Serve with fried dice of bread.

[Split peas, haricot beans, butter beans may be used instead of lentils. For beans, use a white-lined pan and omit carrot.]

## SCOTCH BROTH (B.)

1 lb. scrag end neck of mutton, 1 small carrot, 1 turnip, 1 onion,  $\frac{1}{2}$  teasp. chopped parsley, 1 tablesp. rice (or pearl barley), seasoning, 1 quart. water.

Wipe and cut up the meat, cut the vegetables into small dice, put them with the meat, seasoning and water into a pan and bring slowly to simmering point. Wash and add the rice or barley. Simmer  $1\frac{1}{2}$ –2 hours, skimming carefully. Add the chopped parsley.

## SHIN OF BEEF SOUP (B.)

$\frac{1}{2}$  lb. shin of beef, bones, 1 carrot, 1 turnip, 1 onion, 1 tablesp. flour, 3 pts. water, seasoning.

Prepare and cut up the vegetables, wipe and cut up the meat, wash the bones, and put all these things, with

the water and seasoning, into a saucepan. Simmer for 4 hours, skimming carefully. Take out the bones, mix the flour to a smooth paste with water, add to the soup and boil for 5 minutes.

### TOMATO SOUP (B.)

1 lb. tomatoes, 1 pt. white stock or water, 1 oz. ham (cooked or raw), carrot, onion, shallot, celery, herbs,  $\frac{1}{2}$  oz. butter, seasoning,  $\frac{1}{2}$  oz. cornflour.

Melt the butter in a white-lined saucepan, cut up and toss in it the ham and vegetables. Add the sliced tomatoes, the herbs, stock and seasoning and simmer for 1 hour. Rub through a sieve, mix the cornflour with a little water or milk, add to the soup and boil for 5 minutes.

### KIDNEY SOUP (D.T.)

$\frac{1}{2}$  lb. gravy beef,  $\frac{1}{2}$  lb. ox kidney, 3 pts. stock, 3 oz. bacon, 1 onion, 1 oz. flour, 1 oz. dripping, seasoning.

Melt the dripping. Cut the beef, kidney and bacon into small pieces, slice the onion and fry all in the dripping until brown. Add the stock and seasoning and simmer for  $2\frac{1}{2}$  hours. Strain and return the liquid to the rinsed pan, allowing a little to become cold for mixing the flour. Thicken the liquid, stir until boiling, cook for 5 minutes, skimming well. Pound the meat to a paste, rub it through a sieve and stir it into the soup.

### WHITE VEGETABLE SOUP (B.)

1 carrot, 1 turnip, 1 onion, 1 stick celery,  $\frac{1}{2}$  oz. dripping, 1 tablesp. flour,  $1\frac{3}{4}$  pts. water,  $\frac{1}{4}$  pt. milk, seasoning.

Cut up the vegetables into small dice, fry them



slightly in the dripping, add the seasoning and water and simmer for 1 hour. Mix the flour to a smooth paste with the milk, add to the soup, and boil for 5 minutes. Add chopped parsley and serve.

#### CARROT SOUP (C.)

4 large carrots, 1 large onion, 1 stick celery, 1 slice raw ham,  $\frac{1}{2}$  pt. milk, 1 oz. dripping, 1 qt. stock, 1 oz. cornflour, seasoning.

Slice thinly the carrot, onion and celery. Cut up the ham finely. Fry these in the dripping, add the stock and simmer gently till the vegetables are tender. Rub through a sieve, return to the rinsed pan and reheat. Mix the cornflour with the milk, add it and the seasoning to the soup and boil for 5 minutes.

#### STEWED WHITING (R.)

1 filleted whiting, 1 onion stuck with 2 cloves, 1 oz. breadcrumbs,  $\frac{1}{2}$  oz. margarine,  $\frac{1}{2}$  pt. milk, 1 blade mace, seasoning, parsley.

Put into a pan the milk, onion and mace, and bring almost to boiling-point. Draw to the side for 10 minutes. Take out the onion and mace.<sup>1</sup> Add margarine, seasoning and crumbs, cut up the fish and add this also. Cook very gently for 10-15 minutes. Add parsley and serve.

#### FISH CREAM (C.)

4 oz. cooked white fish, 1 oz. butter, 2 oz. breadcrumbs,  $\frac{1}{2}$  pt. milk, 1 egg, seasoning.

Flake the fish and mix it with the crumbs. Add the butter. Heat the milk and add it, beating well.

<sup>1</sup> These can be used again in soup or stew.

## FOR THE NORMAL HOUSEHOLD 131

Beat the egg and add it with the seasoning. Put into a greased basin, cover with greased paper, and steam for  $\frac{1}{2}$  hour. Serve with white sauce.

### FISH CUSTARD (C.)

1 lb. filleted fresh haddock, 1 egg,  $\frac{1}{2}$  pt. milk, 1 oz. butter, breadcrumbs, seasoning.

Lay the fillets in a greased dish and scatter breadcrumbs thickly over them. Beat the egg with the milk and seasoning, and pour over the fish. Add the butter in small knobs and bake for  $\frac{1}{2}$  hour in a moderately quick oven.

### STEWED MACKEREL (R.)

1 mackerel,  $\frac{1}{2}$  oz. margarine, 1 teasp. flour, seasoning, 1 blade mace, 6 peppercorns, 1 dessertsp. vinegar, 1 gill water.

Prepare the fish, melt the margarine in a pan, add flour and mix well, then add water, vinegar, spices and seasoning. When almost at boiling-point lay the fish in this sauce and simmer for about 20 minutes. Serve hot or cold.

### BAKED HADDOCK (C.)

1 haddock, 1 oz. dripping, 1 oz. breadcrumbs, 1 egg, chopped parsley, seasoning.

Melt part of the dripping in a fireproof dish and sprinkle in a few crumbs, some parsley and seasoning. Beat up the egg, coat the fish with it and lay it in the dish. Sprinkle again with crumbs, parsley and seasoning, add the rest of the egg and the dripping, melted, and bake for  $\frac{1}{2}$  hour.

## BAKED STUFFED HADDOCK (B.)

1 small fresh haddock, 1 tablesp. soaked stale bread, dripping, pinch of herbs,  $\frac{1}{4}$  teasp. chopped parsley, seasoning, milk to bind.

Prepare and dry the fish ; press out the water from the bread and break it up with a fork. Mix with it the herbs, parsley, seasoning and  $\frac{1}{4}$  oz. dripping. Bind with a little milk, stuff the fish and dredge with flour. Lay it flat on a tin with heated dripping and bake in a moderate oven for 20 minutes, basting from time to time. Serve with brown gravy.

## FISH STEWED IN MILK (C.)

1 lb. white fish, 1 oz. butter, 1 oz. flour, 1 pt. milk, seasoning.

Lay the fish in a greased pie-dish and cover it with milk or milk and water. Cook in a moderate oven for 20-30 minutes. Take out the fish and keep it hot. Mix the flour smoothly with a little cold milk, put it into a saucepan with the butter and seasoning, strain into it the liquor in which the fish was cooked, bring to boiling-point and cook for five minutes, then pour it over the fish.

[If liked, a small pinch of mixed herbs may be added.]

## SOUSED HERRINGS (OR MACKEREL)

4 herrings or mackerel, cloves, bay leaves, 1 blade mace, seasoning, vinegar, water.

Prepare and bone the herrings and lay them flat. Place on each a clove and a small piece of bay, and sprinkle with pepper and salt. Roll them up, lay them in a pie-dish with the roes, add the mace and

## FOR THE NORMAL HOUSEHOLD 133

another clove or two, and pour in enough vinegar and water (equal parts) to cover them. Bake in a moderate oven for  $\frac{1}{2}$  hour, and serve hot or cold.

### FISH SALAD (D.T.)

1 round lettuce, 1 small cucumber, 1 gill mayonnaise, 8 oz. (or more) of any cooked fish, parsley.

Wash and dry the lettuce carefully, pull the leaves apart and arrange them in a bowl. Divide the fish into small pieces, toss them in the mayonnaise and arrange them in the centre of the lettuce. Peel and slice the cucumber and arrange it round the fish. Sprinkle with finely chopped parsley and serve very cold.

### CURRIED FISH FRITTERS (A.T.D.S. AND B.)

$\frac{1}{2}$  smoked haddock, seasoning, curry powder, 2 oz. flour, 1 dessertsp. salad oil,  $\frac{1}{2}$  gill tepid water, 1 egg-white.

Sieve the flour with a little salt and make a well in the centre. Add the oil and tepid water, mix to a smooth paste and beat for a few minutes, then set aside for 30 minutes. Whisk the egg-white stiffly and fold it into the batter. While the batter is standing, remove skin and bone from the fish and cut it into small pieces. Season with pepper and curry powder, dip each piece into the batter and fry in deep fat.

### DRESSED CRAB (A.T.D.S.)

1 medium crab, 2 tablesp. vinegar, 2 tablesp. salad oil, seasoning, lemon, 1 egg.

Take all the meat from the shell and claws, flake it

and season well, then mix with the salad oil and vinegar. Wash the shell, put the mixture into it and garnish with parsley, slices of lemon and the sieved yolk of a hard-boiled egg.

#### DRESSED CRAB (ANOTHER WAY—R.)

2 crabs, 1 teasp. parsley, 1 teasp. vinegar, seasoning,  
1 hard-boiled egg, 1 dessertsp. cream.

Take out the meat from the body and claws, throwing away gills, etc. Chop the egg-white and add it with the vinegar, cream and seasoning to the meat. Mix well. Wash and dry the larger shell and pack it tightly with the mixture. Decorate the surface with parsley and sieved egg-yolk. Serve on a d'oyley or a bed of lettuce.

#### SCRAMBLED CRAB (D.T.)

Mix  $\frac{1}{4}$  gill cream with 4 eggs, season with salt and pepper, and heat for one minute. Melt 1 tablesp. butter in a frying-pan and add 3 tablesp. crab meat. Cook for 5 minutes, stirring all the time. Now add the egg mixture and stir well for 4 or 5 minutes. Serve very hot.

#### STEWED LIVER (C.)

$\frac{1}{2}$  lb. calf's liver, 2 tablesp. flour,  $\frac{1}{4}$  pt. water, 1 oz. dripping, seasoning.

Cut the liver into slices and coat them with seasoned flour. Melt the dripping in a saucepan, stir in the rest of the flour, add  $\frac{1}{4}$  pt. of water, then the liver, and let it stew very slowly for 2 hours.

[A little fat bacon and a good-sized onion might well be added.]

## BEEF HOT-POT (B.)

1 lb. beef, 1 lb. parboiled potatoes, 2 parboiled onions, dripping, 2 teasp. seasoned flour,  $\frac{1}{2}$  pt. water.

Wipe and cut up the meat and roll it in seasoned flour. Put it and the sliced onions into a pie-dish and pour in the water. Cut the potatoes into moderately thin slices and place them on the top as a crust. Add some knobs of dripping and bake gently for 2 hours, covering with greased paper if the potatoes are browning too quickly.

## YORKSHIRE HOT-POT.

$\frac{3}{4}$  lb. neck of mutton, 1 lb. potatoes,  $\frac{1}{4}$  lb. onions, 1 sheep's kidney,  $\frac{1}{4}$  lb. mushrooms,  $\frac{1}{2}$  pt. stock or water,  $\frac{1}{2}$  oz. dripping, seasoning.

Cut up the meat, slice the potatoes and onions and prepare the mushrooms. Put the ingredients in layers in a stew-jar or casserole with potatoes at the top. Add a few knobs of dripping. Season the stock well and pour it in. Cover, and bake in a moderate oven for 2 hours, then take off the lid and bake for  $\frac{1}{2}$  hour longer.

## PORK AND APPLE HOT-POT (R.)

1 lb. pork, 2 large apples, 2 large onions, seasoning, 1 teasp. powdered sage, 8 small potatoes, 2 teacupfuls boiling water.

Lay the pork, sliced, in a casserole, chop the apples and onions quite small and sprinkle them and the sage over the pork. Add half of the potatoes, sliced, then the remaining potatoes, cut in halves with the cut sides

downwards. Season and add the water. Cover with a lid or greased paper. Cook in an oven; quickly at first and then gently for  $2\frac{1}{2}$ –3 hours. Remove cover  $\frac{1}{2}$  hour before dishing to allow potatoes to brown.

### BEEF IN CASSEROLE

Grease a casserole with dripping, cut up an onion and line the bottom with it; lay the whole piece of prepared steak on the top and add more onion. Pour in enough stock to create a good steam, cover with a tight-fitting lid and bake for at least 2 hours.

### OX-TAIL IN CASSEROLE (D.T.)

Slice 3 or 4 good-sized onions and fry in a little dripping. Cut up the ox-tail, roll the pieces in seasoned flour, add them to the onions and fry until nicely browned. Add a little more flour and stir well to prevent burning. Now add some water or stock, stirring all the time, and let it come to the boil. Turn into a casserole, add a pinch of mixed herbs in muslin, cover and cook in a slow oven for at least 4 hours. Carrots are a useful addition.

### CASSEROLE OF RABBIT (D.T.)

1 rabbit, 1 lb. potatoes, 1 oz. dripping,  $1\frac{1}{2}$  pts. stock,  $\frac{1}{2}$  lb. bacon, 1 large onion, 1 oz. flour, pinch of herbs, seasoning.

Joint the rabbit and let it stand in cold salted water for  $\frac{1}{2}$  hour. Wash thoroughly and dry well, then fry with sliced onion in hot dripping until a good brown. Take out the rabbit, add flour to the onion and fry to

a rich brown. Pour in the stock and stir till boiling. Cut up the bacon into small thin slices and add it. Add the herbs in muslin. Put layers of rabbit and thickly sliced potato in a casserole. Season well and pour in the sauce. Add a final layer of potato, cover the casserole and cook slowly for  $1\frac{1}{2}$  hours. Serve in the casserole.

### BEEF OLIVES (A.D.T.S.)

1 lb. stewing steak, 1 oz. flour, 6 peppercorns, 1 small onion, 1 tablesp. mushroom ketchup, 1 oz. veal stuffing,  $1\frac{1}{2}$  oz. margarine or dripping, 1 pt. stock, 1 stick celery, 2 cloves, seasoning.

Cut the meat into thin slices, spread the stuffing on them, roll and tie loosely. Make a gravy thus: Put the fat into a pan, heat it and fry the onion; brown the meat-rolls slightly and remove them. Fry the flour, then add the stock gradually, also the onion, celery, ketchup, spices and seasoning. Boil up this sauce, put in the olives and simmer very gently for  $1\frac{1}{2}$  hours. When dishing, remove the strings and garnish with fresh parsley.

### TOAD IN THE HOLE

$\frac{1}{2}$  lb. small sausages,  $\frac{1}{2}$  pt. batter.

Lay the sausages in a shallow pie-dish or baking-tin. Bake in a moderate oven for a few minutes to extract the fat. Let the batter stand for at least  $\frac{1}{2}$  hour after making, then pour it over the sausages and bake for about 30 minutes in an oven fairly hot at first, but reduce the heat when the batter has set.



## STEW WITH SAVOURY BALLS (C.)

$\frac{1}{2}$  lb. gravy beef, 2 teasp. vinegar, seasoning, 1 oz. dripping, 1 onion, 1 tablesp. flour,  $\frac{1}{2}$  pt. water.

Heat the dripping in a saucepan and brown the sliced onion in it. Add the flour and brown it, then add the water gradually and bring it to simmering point. Cut the meat into small pieces and put it with the vinegar and seasoning into the pan. Cover and stew very gently for  $2\frac{1}{2}$ –3 hours. Make the savoury balls and allow  $\frac{1}{2}$  hour for cooking them in the stew.

## SAVOURY BALLS

$\frac{1}{2}$  lb. flour,  $1\frac{1}{2}$  oz. suet, baking powder, herbs,  $\frac{1}{2}$  small onion, seasoning, 1 teasp. parsley.

Chop the suet finely, add it to the flour, then add seasoning, baking powder, onion, a pinch of herbs, parsley. Mix well and add enough water to make a stiff paste. Form into small balls, roll them lightly in flour and add to the stew.

## BAKED MEAT PIE (C.)

1 lb. meat pieces, seasoning,  $\frac{1}{2}$  lb. flour, 1 egg, dripping, 1 lb. mashed potato.

Grease a pie-dish with the dripping. Make a smooth batter with the potato, flour, beaten egg, seasoning and  $\frac{1}{2}$  pt. potato water, stirring quickly all the while. Pour half of the batter into the dish, add the meat pieces and seasoning, pour in the rest of the batter and bake for  $1\frac{1}{2}$  hours in a moderate oven.

[A little onion would be an improvement.]

## BULLOCK'S HEART STEWED

Wash the heart thoroughly and let it soak for 2-3 hours in vinegar and water. Drain it well and fill it with veal stuffing. Put it in a large stew-jar or deep casserole, add an onion stuck with 4 cloves and season well. Pour in 1 pt. of good stock or gravy, bring to boiling-point and then simmer gently in the oven for 5 hours. Thicken the gravy with a little flour and serve very hot.

## HARICOT MUTTON (B.)

1 lb. middle neck, 1 oz. dripping, 1 oz. flour, 1 onion, 1 small carrot, piece of turnip, seasoning,  $\frac{3}{4}$  pt. stock or water, 2 oz. haricot beans.

Soak the beans overnight and cook them until soft in boiling salted water. Wipe the meat and take off any superfluous fat. Divide it into suitable pieces, fry it in the hot dripping and take it from the pan. Cut up the carrot and turnip and fry them till they begin to shrivel. Add the onion and fry slightly. Reduce the heat and fry the flour until well browned but not burnt. Add the stock and seasoning, bring to boiling-point and skim. Pour this sauce over the meat and vegetables and simmer for 1½-2 hours. Pile the meat on a hot dish, pour the sauce over it, arrange the beans at each end and sprinkle them with chopped parsley.

## CURRIED TRIPE (A.T.D.S.)

1 lb. tripe, 1 oz. fat, 1 onion,  $\frac{1}{2}$  small apple, 1 oz. curry powder, 1 oz. flour, 1 pt. stock or water, seasoning,  $\frac{1}{2}$  lb. rice.

Blanch the tripe in the usual way and cut it into

small pieces. Peel and chop the apple and onion and fry them in the fat. Add the curry powder and flour and fry slightly, then add the stock and boil, stirring well. Put in the tripe and seasoning and cook gently for  $1\frac{1}{2}$  hours. Serve with a rice border.

#### BEEF AND KIDNEY STEW

1 lb. good stewing steak, 4 oz. kidney, 2 onions, 1 oz. flour, seasoning, water.

Cut up the beef and kidney into fairly small pieces and roll them in seasoned flour. Slice the onions and add to the meat. Add  $\frac{1}{2}$  pint cold water. Bring to boiling-point and simmer very gently for  $2\frac{1}{2}$ – $3\frac{1}{2}$  hours.

#### WHITE STEW OF RABBIT

1 rabbit, 3 rashers fat bacon, 1 large onion, 1 oz. flour, seasoning,  $\frac{3}{4}$  pt. stock or water.

Cut up the rabbit and let it lie in salt and water for 20 minutes. Thoroughly wash each part and put into a white-lined saucepan. Slice the onion and add it to the rabbit. Add the seasoning and stock and bring to boiling-point. Put in the bacon in small slices and simmer very gently for 1–2 hours, according to the age and quality of the rabbit. Ten minutes before the dish is needed, mix the flour smoothly with a little cold water, add to the stew and simmer for 5 minutes.

#### MUTTON AND HAM CAKES

$\frac{1}{2}$  lb. cooked mutton and ham,  $\frac{1}{2}$  lb. cooked potato, 1 egg, 1 oz. butter or margarine, seasoning, 1 small onion, 2 teasp. flour, 1 teasp. chopped parsley, breadcrumbs.

Mince the meat and onion, melt the fat in a pan and

put in the potato, the mince, flour and parsley, the seasoning and 1 teasp. of Worcester sauce. Mix well and add half the egg, well beaten. Form the mixture into 3 flat cakes and coat with egg and crumbs. Bake in a hot oven until nicely browned. Serve with tomato or brown sauce.

### CREAMED LAMB (D.T.)

1 lb. cold leg of lamb, 2 oz. margarine, 1 gill milk, 1 tablesp. flour, 1 lb. green peas, mint, lemon juice.

Melt 1 oz. margarine in a pan, add flour and mix well; add the milk all at once, stir until boiling and cook for 5 minutes. Season well, then reduce heat and add the lamb cut into dice. Let it remain until the lamb is quite hot, but do not boil. Add a little lemon juice. Cook the peas with mint in salted water and drain. Toss them in 1 oz. heated margarine and serve as a border with the lamb.

### SAVOURY MEAT ROLL

Make a suet crust, roll it out thinly in a long strip and spread it with the following mixture: 1 teacupful of sieved butter beans, 2 oz. of minced fat bacon,  $\frac{1}{2}$  teacupful of white sauce, seasoning, and herbs if liked. Form into a roll, tie in a floured cloth and steam for 2 $\frac{1}{2}$  hours. Serve with onion sauce.

### LAMB CUTLETS (D.T.)

Coat each cutlet with beaten egg and lightly browned crumbs and fry in deep fat. Drain well and dish in a circle. Fill the centre with young boiled carrots,

drained very dry and tossed in melted butter over the fire until very hot. Sprinkle with finely chopped parsley and serve with brown or tomato sauce.

### CUTLETS IN CASSEROLE (D.T.)

6 cutlets from neck of mutton, 1 or 2 onions, 1 carrot, 1 turnip, 2 sticks celery, 1 oz. butter, 2 rashers bacon, 1 pt. stock, flour, herbs, seasoning.

Trim the cutlets and cover them with seasoned flour. Melt the butter in a pan, add the bacon, cut in dice, and the onions sliced, and fry with the cutlets for 2 or 3 minutes. Grease a casserole and put in a layer of the vegetables, cut in dice, then the cutlets and bacon, then more vegetables. Sprinkle in a pinch of powdered herbs, add enough stock just to cover and cook in a moderate oven for 2 hours.

### CORNISH PASTIES

$\frac{1}{4}$  lb. steak (cooked or uncooked), 1 small onion, 1 large cooked potato, a little gravy or stock, seasoning,  $\frac{1}{4}$  lb. short pastry.

Cut the meat finely and chop the onion, then mix them with the gravy, mashed potato and seasoning. Roll out the pastry into four circles, put a little of the meat mixture upon each piece, damp the edges and gather them up, so that the meat is covered. Bake on a tin in a fairly hot oven.

### MUTTON CUTLETS WITH HARICOTS (D.T.)

4 plump neck cutlets,  $\frac{1}{4}$  lb. haricot beans, 1 onion, seasoning, 1 oz. butter,  $\frac{1}{4}$  gill whipped cream.

Boil the haricots with an onion and rub them through

a sieve. While they are still hot, add the butter and seasoning and beat until smooth. Gradually beat in the cream, put into a pan and stir until quite hot. Trim the cutlets and grill them. Pile the haricot purée on a hot dish and arrange the cutlets round it.

### CHICKEN IN CASSEROLE (D.T.)

1 chicken,  $\frac{1}{2}$  lb. ham or bacon, 2 sticks celery, 1 onion, 1 carrot, 2 oz. butter,  $1\frac{1}{2}$  gills stock, seasoning.

Cut the chicken into neat joints. Prepare the vegetables and cut them in dice, also the ham or bacon. Put these into a casserole, lay the joints of chicken on top, season and add knobs of butter. Cover the casserole and cook in a hot oven for 20 minutes. Reduce the heat and cook gently for  $\frac{1}{2}$ – $\frac{3}{4}$  hour, basting well. Take out the chicken and keep it hot. Add a good thickened stock to the vegetables, bring to the boil, put back the bird and serve.

### FRENCH POTATOES (Ec.)

1 lb. potatoes, 1 small onion, 2 oz. fat bacon or dripping,  $\frac{1}{2}$  pt. gravy (or stock or water), 1 tablesp. vinegar, seasoning, 1 oz. flour.

Boil the potatoes for 10 minutes, then cut into thick slices. Chop the onion and bacon finely and fry in a casserole until golden brown. Add flour and gravy and stir till boiling. Add vinegar, seasoning and potatoes. Simmer till tender without breaking the potatoes.

## DERBY POTATOES (Ec.)

1 lb. potatoes, 1 small onion, 1 tomato or 1 gill cooked dried peas, 1 oz. dripping,  $\frac{1}{2}$  pt. stock or water, seasoning.

Cut the potatoes into thick slices, chop the onion and fry it slightly in the dripping. Slice the tomato and add it to the onion with the potatoes, seasoning and stock. Simmer till potatoes are tender and stock is reduced.

## BENGAL POTATOES (Ec.)

1 $\frac{1}{2}$  lb. potatoes, 2 oz. dripping, 1 teasp. chopped parsley,  $\frac{1}{2}$  oz. curry powder,  $\frac{1}{2}$  oz. flour, seasoning,  $\frac{1}{2}$  teasp. vinegar,  $\frac{1}{2}$  pt. stock or water.

Boil the potatoes until almost cooked, then cut into thick slices. Fry carefully in the hot fat, then put aside to keep hot. Mix flour and curry powder and fry them in the fat. Add liquid, seasoning and vinegar. Boil up and simmer gently for 20–30 minutes. Reheat potatoes in the curry sauce and serve sprinkled with parsley.

## POTATOES WITH CHEESE (D.T.)

1 lb. potatoes,  $\frac{1}{2}$  pt. white sauce, 2 oz. grated cheese, 1 oz. margarine, stale crumbs.

Boil the potatoes, cut them into slices or dice and mix them with the cheese and sauce. Put them into a fireproof dish and sprinkle with fine crumbs. Melt the margarine and pour it over the crumbs. Bake in a moderate oven until hot and lightly browned.

## POTATO CREAM (C.)

1 good-sized potato,  $\frac{1}{4}$  pt. milk, a little butter.

Bake the potato without hardening the skin and scrape it out, especially the part nearest the skin. Add a little butter and the milk, working all to a creamy paste. Reheat and serve.

## SAVOURY POTATOES (C.)

3 large potatoes, 2 Spanish onions, seasoning, 1 oz. butter,  $\frac{1}{4}$  pt. milk,  $\frac{1}{4}$  pt. water.

Slice the potatoes and onions and fill a pie-dish with alternate layers. Season, cover with the milk and water, add little knobs of butter and bake in a moderate oven for 1 hour.

## VEGETABLE STEW (B.)

2 lb. potatoes, 1 turnip, 1 carrot, 2 onions, seasoning, 2 tablesp. haricot beans (or lentils or peas), 1 pt. milk,  $\frac{1}{4}$  lb. suet crust.

Wash and soak the pulse overnight in cold water and cook till soft in  $\frac{1}{2}$  pint salted water. Cut the potatoes in thick slices and the other vegetables in dice, and put them in alternate layers in a pan, sprinkling the pulse and seasoning among them. Pour in the milk and any water left from boiling the pulse and bring slowly to simmering point. Make the suet crust and form into a circle a little smaller than the saucepan. Place it on the vegetables and simmer gently for 1 hour. Cut the crust across into 6 or 8 pieces, pile the vegetables in the centre of a dish, pour the gravy over them, arrange the crust round them and garnish with chopped parsley.



## VEGETABLE LOAF

$\frac{1}{2}$  lb. cooked potato,  $\frac{1}{2}$  lb. cooked cabbage, 1 oz. dripping or butter, seasoning, browned crumbs.

Mash the potato and chop the cabbage. Melt the fat and blend it with the vegetables. Add seasoning, put into a greased basin and heat thoroughly by steaming. Turn out and coat with browned crumbs.

[Or the mixture may be baked in a pie-dish. Other vegetables, e.g. potato and carrot, may be treated in the same way.]

## SAVOURY ROLL (A.T.D.S.)

$\frac{1}{2}$  lb. cooked lentils, 3 oz. breadcrumbs, 1 egg, 1 teacupful boiled rice,  $\frac{1}{2}$  teacupful mashed potato, a little vegetable extract, 1 tablesp. melted butter.

Mix all together and form into a roll or loaf. Brush over with beaten egg, place on a buttered tin and bake for  $\frac{1}{2}$  hour in a moderate oven. Garnish with beetroot or tomato.

This mixture, or the following, may be used for lentil sausages.

## LENTIL AND TOMATO SAUSAGES (A.T.D.S.)

$\frac{3}{4}$  lb. lentils, 1 onion, 1 lb. tomatoes,  $\frac{1}{4}$  lb. dry boiled rice,  $\frac{1}{4}$  teasp. curry powder, seasoning, pinch of herbs, fat or oil for frying.

Wash the lentils, chop the onion and boil them together till they are tender and all the water has been absorbed. Scald, peel and mash the tomatoes. Mix all ingredients together and form into sausages about 3 inches long. If the mixture is not thick enough, stiffen with a few breadcrumbs. Fry a golden brown.

### BEAN CURRY (A.T.D.S.)

- 4 oz. haricot beans, 1 small teasp. curry powder, 1 teasp. flour, lemon juice, 1 small apple,  $\frac{1}{4}$  teasp. brown sugar,  $\frac{1}{2}$  teasp. ground ginger, margarine or nut butter, rice.

Soak the beans overnight, then boil them in slightly salted water until tender. Fry the chopped apple in the fat, then stir in the flour, ginger and curry powder. Add the sugar and cooked beans and stir well, moistening, as required, with the bean water. Boil up, add a little lemon juice and serve with boiled rice.

### LENTIL RISsoles (B.)

- 4 oz. lentils, pinch of mixed herbs, 1 teasp. chopped parsley,  $\frac{1}{2}$  oz. grated cheese,  $\frac{1}{2}$  oz. butter, 1 oz. breadcrumbs, seasoning, 1 egg.

Wash the lentils and soak them overnight in  $\frac{1}{2}$  pint cold water. Cook them in the water until tender, then beat them over the fire till smooth and dry. Add the butter, cheese, herbs, parsley and seasoning. Mix with enough egg to bind to a smooth paste. Form into rolls, coat with egg and crumbs and fry in deep fat till crisp and brown. Garnish with parsley.

### BREAD AND CHEESE PUDDING (B.)

- 3 small thin slices bread,  $\frac{1}{2}$  pt. milk, seasoning, 1 small egg, 1 oz. grated cheese, made mustard.

Arrange the bread and cheese in layers in a greased pie-dish. Beat the egg and add seasonings and milk. Pour the custard over the bread and allow to soak for  $\frac{1}{2}$  hour. Bake in a moderate oven for  $\frac{1}{2}$  hour.

## ONIONS AND CHEESE (C.)

6 onions, 1 oz. butter, 1 oz. flour,  $\frac{1}{4}$  pt. water,  $\frac{1}{4}$  pt. milk, seasoning, 1 oz. grated cheese.

Simmer the onions whole until tender. Drain them and coat with a sauce made as follows : Melt the butter over gentle heat, stir in the flour, add the water and milk gradually, stirring all the time. Boil for 3 minutes, then add the cheese and seasoning.

## SPAGHETTI, TOMATO AND CHEESE (C.)

1 small onion, 1 oz. margarine, 1 oz. cheese, 3 tomatoes, a little gravy, 4 oz. spaghetti or macaroni, seasoning.

Fry the sliced onions in the margarine. Add the tomatoes, peeled and cut up, and the gravy. Boil the spaghetti till tender, drain it well and add it to the rest. Season and cook till it is thoroughly hot, adding the grated cheese at the end.

## MACARONI STEW (C.)

4 onions, 2 oz. butter, 6 oz. macaroni, seasoning, 1 qt. water, 1 large tomato.

Brown the sliced onions in the melted butter. Break up the macaroni and add. Season, and cover with the water. Cook very slowly for about 1 hour, adding the tomatoes about half-time.

## EGG SALAD (D.T.)

4 hard-boiled eggs, cabbage lettuce, 1 tablesp. Mayonnaise sauce, 1 tablesp. anchovy essence, 1 tablesp. whipped cream.

Cut each egg in half and remove the yolks. Rub

these through a sieve and mix with the anchovy essence, Mayonnaise sauce and cream. Cut a small piece from the bottom of each egg, lay the eggs on young lettuce leaves and fill with the mixture. Keep in a cool place until about to serve.

[A little watercress is a good addition.]

### BIRD'S NEST PUDDING (R.)

3 or 4 apples, 2 oz. tapioca or sago,  $1\frac{1}{2}$ –2 oz. sugar, 1 pt. water, cinnamon,  $\frac{1}{2}$  oz. margarine.

Wash the sago and steep it in the water, then stir over gentle heat until clear. Peel and core the apples and put them in a greased pie-dish, filling the cavities with sugar. Pour in the cooked sago and put tiny bits of margarine and cinnamon on the top. Bake in a moderate oven till the apples are soft.

### APPLE PUDDING (C.)

4 oz. flour, 4 oz. breadcrumbs, 4 oz. suet, 2 oz. sugar, 8 oz. apple, 1 egg, lemon juice or milk.

Mix the flour, crumbs and sugar, then add the chopped suet and apples and mix again. Add the beaten egg, and lemon juice or milk if needed. Steam for 2–2½ hours.

### FRUIT MOULD (C.)

1 lb. juicy fruit, water, sugar; 2 tablesp. cornflour,  $\frac{1}{2}$  pt. water.

Stew the fruit with a little water and sugar and put it through a sieve or pound it to a pulp. Add water, if necessary, to make it up to  $\frac{1}{2}$  pint. Mix the cornflour

## 150 FOOD VALUES IN PRACTICE

with  $\frac{1}{4}$  pint cold water and add to the fruit. Boil for 5 minutes, stirring all the time. Pour into a wet mould to set.

### LEMON CREAM (C.)

2 lemons, 1 pt. water, 2 oz. cornflour, 6 oz. white sugar, 2 eggs.

Pare the lemons thinly and boil the rind with the water for 5 minutes. Mix the cornflour smoothly with the strained juice of the lemons. Add the liquid from the rinds and boil for 5 minutes, stirring all the time. Add the sugar and cool slightly. Put in the well-beaten eggs and stir over gentle heat till the mixture thickens. Pour into a wet mould to set.

### APPLE CHARLOTTE (B.)

1 lb. apples,  $1\frac{1}{2}$  oz. suet, 2 oz. breadcrumbs, 2 oz. sugar,  $\frac{1}{2}$  lemon, browned crumbs.

Peel, core and cut up the apples and chop the suet finely. Grease a pie-dish well and coat it with browned crumbs. Mix the suet, fresh breadcrumbs, sugar, lemon juice and grated rind and fill the dish with alternate layers of the mixture and the apples. Bake in a moderate oven for 1 hour.

### SAGO MOULD (S.)

1 teacupful sago, 5 teacupfuls water, 4 tablesp. golden syrup, rind and juice of 1 lemon.

Steep the sago for some hours in 4 teacupfuls of water. Add the remaining water and the lemon rind and boil till clear. Add the syrup and the lemon juice. Put into a wet mould to set. Serve with golden syrup or custard.

### MARMALADE PUDDING (B.)

2 oz. breadcrumbs, 2 oz. flour, 2 oz. suet, 2 oz. candied peel, grated rind of 1 lemon, 1 oz. castor sugar, 1 egg,  $\frac{1}{4}$  teasp. baking powder, 1 tablesp. milk, 2 tablesp. marmalade, marmalade sauce.

Chop the suet and candied peel and mix all the dry ingredients. Add the marmalade, beaten egg and milk, using more milk if too stiff. Put the mixture into a greased basin, cover with greased paper and steam for 2 hours. Serve with marmalade sauce.

### APPLE SNOWBALLS (B.)

4 tablesp. rice, 4 apples, 1 dessertsp. sugar, 4 cloves.

Cook the rice in boiling salted water till tender, then strain. Peel and core the apples and put  $\frac{1}{4}$  teasp. sugar and a clove in the centre of each. Enclose the apples in the rice, tie each in a pudding cloth rather tightly. Add enough water to the rice water to cover the apples. Bring to boiling-point, put in the puddings and boil for 30 minutes. Serve sprinkled with brown sugar.

### CHOCOLATE MOULD (B.)

2 oz. cornflour, 1 oz. castor sugar,  $1\frac{1}{2}$  oz. plain chocolate, 1 pt. milk,  $\frac{1}{2}$  gill extra milk, vanilla, 1 gill custard sauce.

Cut the chocolate into small pieces, let it dissolve in the milk and bring to boiling-point. Add the sugar. Mix the cornflour smoothly with the extra milk. Pour the chocolate mixture over it, stirring well. Put back into the pan, bring to boiling-point and cook for 10 minutes, stirring all the time. Add the vanilla,

pour into a wet mould and put aside to set. Serve with custard sauce.

[Ground rice mould, with or without chocolate, may be prepared in the same way.]

### FRUIT IN BATTER (B.)

$\frac{1}{2}$  pt. batter, 2 oz. dripping, fresh fruit (e.g. apples, pears, cherries, bananas, apricots, etc.).

Put the prepared fruit in a greased pie-dish with a little sugar. Pour the batter over it and add the fat in little knobs. Bake for 30 minutes in a moderately hot oven.

### RICE AND RAISIN PUDDING (D.T.)

Wash  $\frac{1}{2}$  lb. unpolished rice and mix with it 3-4 oz. seedless raisins. Tie them in a scalded pudding cloth, leaving plenty of room for the rice to swell. Put into a pan of fast boiling water, slightly salted, and boil quickly for an hour, keeping well covered. Serve very hot with jam or syrup sauce.

### BAKED APPLE PUDDING (D.T.)

1 $\frac{1}{2}$  lb. cooking apples, 2 oz. margarine, 1 gill water, tablesp. golden syrup, 6 oz. breadcrumbs, grated rind of  $\frac{1}{2}$  lemon.

Peel, core and slice the apples and put them in a pie-dish in layers with the crumbs and little knobs of margarine. Mix the syrup, water and grated lemon and pour it over the top layer of crumbs. Sprinkle with sugar and add a little more margarine. Bake in a moderate oven for  $\frac{3}{4}$ -1 hour. Serve with custard.

## QUEEN OF PUDDINGS (B.)

$\frac{1}{2}$  pt. breadcrumbs,  $\frac{1}{2}$  pt. milk, 1 oz. butter, 2 eggs, grated rind of 1 lemon, 2 oz. sugar, 2 tablesp. jam.

Boil the milk and add the crumbs, butter, lemon rind and 1 oz. sugar. Cool slightly and add the egg-yolks. Pour into a buttered pie-dish and bake in a moderate oven till set. Spread with jam. Whip the egg-white very stiffly, and lightly fold in 1 oz. castor sugar. Pile this over the pudding and dredge with sugar. Place in a cool oven and bake until the top is crisp.

## BUTTERED APPLES

Pare and core, without breaking, three or four large apples, and set them upon rounds of bread in a well-buttered tin. Fill the holes with butter and brown sugar and bake gently until tender. Place them on a hot dish, put a little jam on the top of each and cover with sifted sugar.

## CHOCOLATE CAKE (B.)

4 oz. flour, 3 oz. grated chocolate, 3 oz. castor sugar, 3 oz. butter, 1 teasp. baking powder, 3 small eggs,  $\frac{1}{2}$  teasp. vanilla essence.

Cream the butter and sugar and beat in the eggs, one by one. Sieve the flour, mix it with the chocolate and stir it in gradually and lightly, adding the baking powder with the last portion. Add the vanilla essence, put the mixture into a lined and greased tin, and bake in a moderate oven for 1 hour. If liked, coat with chocolate icing and decorate with nuts.



## RICE CAKES

3 oz. ground rice, 1 oz. flour, 4 oz. sugar, 2 oz. butter, 2 eggs,  $\frac{1}{2}$  teasp. baking powder.

Put the flour, rice, sugar and butter into a basin and mix with a wooden spoon, finally rubbing in the butter a little with the hands. Add the well-beaten eggs to the mixture and beat again. Add the baking powder and bake in small well-buttered tins in a moderately quick oven until nicely browned.

## MADEIRA CAKE (B.)

8 oz. flour, 5 oz. butter, 5 oz. castor sugar, grated lemon rind, 4 eggs, 1 teasp. baking powder, slice of citron peel.

Prepare as for chocolate cake, adding the lemon rind when the last egg has been beaten into the mixture, and omitting the chocolate. Bake in a moderate oven for  $1\frac{1}{2}$  hours, placing the citron on the top of the cake after the first 20 minutes, when the top is set.

## VINEGAR CAKE.

$\frac{3}{4}$  lb. flour,  $1\frac{1}{2}$  oz. butter (or other soft fat), 2 oz. sugar, salt,  $\frac{1}{2}$  teasp. bicarbonate of soda, 2 oz. sultanas, a little chopped candied peel, 1 egg, milk, 1 dessertsp. vinegar.

Cream the butter and sugar. Sieve the flour with the salt and soda. Beat the egg and to the creamed butter and sugar add alternately a little flour and a little egg. Beat well. If necessary use a little milk to give the mixture a creamy consistency. Add the fruit and finally the vinegar. Line a tin carefully, pour in the mixture and bake.

### SCOTCH SEED CAKE (B.)

7 oz. flour, 4 oz. sugar, 4 oz. mixed peel, 4 oz. butter or margarine, 1 oz. almonds, 1 dessertsp. caraway seeds, 1 teasp. baking powder, 3 eggs.

Chop the almonds and shred the peel. Cream the sugar and butter and beat in the eggs. Sieve the flour and stir it in lightly, reserving 1 tablespoonful. Add the peel and caraway seeds and half the nuts. Mix the remaining flour with the baking powder and add these lightly. If the mixture is too stiff, add a very little milk. Sprinkle the rest of the almonds on the cake just as the top has set.

### POTATO CAKES (D.T.)

Mash 4 medium freshly boiled potatoes. Add  $\frac{1}{2}$  lb. flour, 2 oz. margarine, 2 oz. lard, 2 oz. currants, pinch of salt, 2 oz. demerara sugar. Mix well together and add enough milk to form a paste. Roll out one inch thick on a well-floured board, cut into suitable circles and bake for 8-10 minutes in a good oven.

## CHAPTER II

### FEVERS AND CONVALESCENCE

#### FEVERS

The old plan of starving a fever arose from the idea that fevers were caused by irritation of the intestine. Nowadays it is a common practice to give as much food as the patient can digest and assimilate, but to insist on the fluid or semi-fluid form. As so often happens, it may be that the newer methods tend to be carried a little too far.

In fevers the body suffers much waste of nitrogen, and protein therefore becomes highly important. The protein-sparers also are useful as they relieve the over-strained kidneys to some extent. The use of fat, though important, is often repugnant to the patient unless a due supply of carbohydrate is also ensured.

The following rules may prove useful :

(1) Give a fluid diet. This is valuable because the flow of saliva is poor, and chewing is troublesome and rather futile. The patient moreover, is losing much water from the tissues and is suffering the great discomfort of thirst besides needing renewal of the supply. Of all fluids milk is the most valuable as it gives in due proportion protein, fat and carbohydrate in a specially digestible form. It may be given plain or diluted or flavoured, according to the recipes given under "Invalid Beverages." Sometimes the system

may refuse ordinary milk and it may be necessary to peptonise it or give it in fermented form.

(2) Increase the protein value of milk by using with it some patent food such as Plasmon, etc. Similarly the addition of a little cream will raise the fat supply, and extra carbohydrate can be given by means of the almost tasteless milk sugar. Later, oatmeal, arrow-root or cornflour may be given as a thin gruel, made with milk. Patent foods also here help to give variety.

(3) Soups and broths may be given, as they stimulate nervous force and appetite. In these a carbohydrate thickening may be used, or a patent carbohydrate or protein food. If the fever is complicated by diarrhœa meat extractives should be avoided.

(4) Albuminous drinks are useful, especially when the patient is able to take only a little food at a time.

(5) Jellies flavoured with wine may be given sparingly.

(6) Actual beverages are important, e.g. cold water, lemonade (with milk sugar, if necessary), other fruit drinks, etc. If there is a tendency to looseness of bowels, plain water or barley water should be given. Tea and coffee are allowable, especially in the early morning.

## CONVALESCENCE

Diet in convalescence is in many ways like that in fevers. Whatever the illness, if it be at all lengthened, there is much loss of body tissue which must be made up by a liberal supply of protein and fat. As fever is only too often an accompaniment and its effects outlast the illness, we have the added difficulty of dealing with weak digestive and assimilative powers.

When the fever has abated and convalescence has really begun, we may begin to thicken the fluid foods, we may give patent malted foods, may add pounded meat to soups and gradually introduce eggs, chicken, fish and other light meats. Fat is often nauseating and may be held back for a time and then given in the form of butter, cream, bacon and even suet, if skilfully blended with other things. Cod-liver oil sometimes succeeds where these others fail. Egg mixtures are possible, especially in the form of light puddings. Jellies are useful and are generally pleasing on account of their coolness, clearness and smoothness of texture.

### MEAT BROTH (E.)

One pound of lean meat is cut into small pieces and put into a pot with about 3 quarts cold water. The pot is then covered and the contents, heated to boiling point, are kept boiling for 3-4 hours. A few bones and vegetable herbs may be added. The broth is poured off and used clear without the meat.

### MUTTON BROTH (R.)

1 lb. lean mutton, 1 pt. water,  $\frac{1}{2}$  oz. rice, salt, 1 teasp. chopped parsley.

Wipe the mutton and cut it into dice, removing any fat. Put it into a saucepan with the water and salt and let it reach boiling-point. Remove scum and let meat and water simmer gently for  $\frac{1}{2}$  hour, then add the rice, well washed and drained. Simmer gently for 2 hours longer, then strain and return the liquid to the pan. When it again reaches boiling-point, add the parsley and cook for 1 minute.

## CALF'S BRAIN SOUP (E.)

One calf's brain is put into cold water for 1 hour, the water is then poured off and the brain washed again. It is then boiled for 1 hour, either in meat broth or salted water, and put through a sieve or colander. The pulp can be diluted with meat broth, boiled over again and served. An egg-yolk may be added.

## EGG BROTH (M.)

1 quart. white stock, 2 eggs, onion juice, seasoning,  $\frac{1}{2}$  teasp. lemon juice, 1 dessertsp. chopped parsley.

Beat up the eggs thoroughly and add them to the warmed stock. Scrape in a little onion juice and add lemon juice and seasoning, and, at the last minute, the parsley. Cook until the eggs thicken and serve with toast or fried dice of bread.

## FISH SOUP (B.)

1 lb. white fish, 1 quart. cold water, seasoning,  $\frac{1}{2}$  onion, piece of carrot, mixed herbs, blade of mace, 1 clove, 1 $\frac{1}{2}$  oz. flour, 1 $\frac{1}{2}$  oz. butter, 1 gill milk, lemon juice, 1 teasp. chopped parsley.

Cut up the fish and put it into a deep saucepan with the water and seasoning. Boil up and skim well. Add the vegetables, sliced, and the herbs and spices. Simmer for 1 hour, then strain off the liquor. Melt the butter in a white-lined saucepan, add the flour and fry it slightly without browning. Add the stock gradually and boil for 5 minutes. Add the milk and a few drops of lemon juice. Garnish with chopped parsley and shreds of cooked carrot.

## SOUPS WITH CEREALS (E.)

Patent barley or oatmeal or pea flour is stirred up first with cold meat broth to a thin mass, then poured into boiling meat broth and left boiling for 1-2 hours. About 1 tablespoonful of the flour is enough for one plate of soup. Before serving, the yolk of 1 raw egg may be added.

## INVALID SOUP (R.)

1 oz. sago, 1 pt. white stock, seasoning, 1 gill milk, 1 egg-yolk.

Boil the stock and stir into it the washed sago blended with 2 tablespoonfuls of cold stock. Simmer till sago is clear. Cool slightly. Mix the milk and beaten egg and stir them into the soup. Add seasoning and serve.

## BARLEY CREAM SOUP (D.T.)

$\frac{1}{4}$  lb. best barley, 1 gill cream, 2 egg-yolks, 1 qt. white stock, lemon juice, seasoning.

Soak the barley in cold water overnight. Drain well and cook in the stock gently until quite soft. Take out a teacupful of the barley and rub the remainder through a sieve. Return all to the clean pan and bring slowly to the boil. Beat the egg-yolks with the cream, let the soup cool a little and pour it into the cream mixture. Reheat but do not boil. Season carefully and flavour with lemon juice.

## STEAMED SOLE (B.)

1 filleted sole, seasoning, lemon juice,  $1\frac{1}{2}$  gills coating sauce, 1 dessertsp. chopped parsley.

Dip the fillets in cold water and dry them. Skin

them and sprinkle the skinned side with pepper, salt and lemon juice. Roll them up from head to tail with skinned side inside. Lay on a buttered plate and cover with buttered paper. Steam over a pan of boiling water and put the lid on top. Drain off the fish liquor and add it to the sauce. Season well, add the parsley and a few drops of lemon juice, boil up and pour it over the fillets. Garnish with lemon.

### FISH CUTLETS (B.)

$\frac{1}{2}$  lb. cooked cod,  $\frac{1}{2}$  oz. butter,  $\frac{1}{2}$  oz. flour,  $\frac{1}{2}$  gill milk, 1 teasp. chopped parsley, seasoning, lemon juice, beaten egg, white crumbs.

Skin and bone the fish and break it up finely. Add seasoning, a little lemon juice, and chopped parsley. Make a panada (see p. 196) with the butter, flour and milk and bind the other ingredients with it. Turn on to a plate, form into a round cake, divide into 6 or 8 pieces and shape these into cutlets. Coat with egg and crumbs and fry in deep fat. Garnish with parsley and lemon.

### STEWED WHITING (A.T.D.S.)

2 whiting (skinned), 2 teasp. flour, a very little nutmeg, seasoning, 1 oz. butter,  $\frac{3}{4}$  pt. milk, chopped parsley.

Wash and dry the fish. Mix the flour, nutmeg and seasoning and coat the fish with them. Butter a fire-proof dish thickly. Put in the fish, sprinkle with chopped parsley and pour milk round. Cover closely with buttered paper and bake gently for 20-30 minutes.



## POACHED FISH (R.)

$\frac{1}{2}$  lb. filleted whiting, 2 oz. bread crumbs, seasoning,  
1 oz. butter, 1 egg, lemon juice.

Flake the fish finely and put it into a basin or mortar with the crumbs, butter, egg, seasoning and lemon juice. Pound all well together, then rub through a sieve. Form into balls or cakes. Have ready a well-greased pan about one-third full of salted water just under boiling-point. Poach the fish very slowly for 10-15 minutes, covering with a greased paper. Serve with white sauce.

## STEAMED FISH PUDDING (D.T.)

1 lb. cooked white fish,  $\frac{1}{2}$  lb. mashed potato, seasoning,  
1 egg-yolk, chopped parsley, sauce.

Free the fish from skin and bone and mix with a little sauce (e.g. shrimp or anchovy or egg) and the mashed potato. Season carefully and put into a buttered mould; cover with buttered paper and steam for  $\frac{1}{2}$  hour. Turn out and garnish with sieved yolk and a little chopped parsley and pour some of the sauce round.

## STEWED FISH (B.)

1 plaice or sole, 1 $\frac{1}{2}$  gills coating sauce, lemon, parsley.

Wash, dry, fillet and skin the fish. Sprinkle the skinned side with pepper, salt and lemon juice. Roll up the fillets from head to tail with the skinned side inside. Lay them in the sauce and simmer very gently for about 15 minutes. Place the fillets on a hot dish, add a few drops of lemon juice to the sauce and pour it over the fillets. Garnish with parsley and lemon.

## FISH CREAM (D.T.)

1 lb. cooked cod, 2 egg-yolks, 1 teacupful breadcrumbs, milk, 1 tablesp. cream, pinch of mace, seasoning.

Take all bone and skin from the fish and pound it in a mortar or strong basin. Just cover the crumbs with boiling milk and leave them to soak. Mix the fish and the soaked crumbs, add all the other ingredients and season to taste. Put into a buttered mould, cover with buttered paper and steam gently for  $\frac{1}{2}$  hour. Serve with tomato sauce.

## CREAMED SOLE WITH CUSTARD SAUCE (M.)

Fillet and skin a sole. Put the skin and bones into a saucepan with  $\frac{1}{2}$  pint of milk and a blade of mace. Simmer gently for  $\frac{1}{2}$  hour. Strain off the liquid and put it back with the fillets, loosely rolled, into the rinsed saucepan. Simmer for 10 minutes. Take out the fillets, cool the milk a little and add 1 or 2 well-beaten eggs. Cook slightly but do not boil. Season, add a few drops of lemon juice and pour over the fillets.

## FISH OMELET (B.)

2 oz. cooked cod, 3 eggs,  $\frac{3}{4}$  oz. butter, seasoning, 1 teasp. chopped parsley, 1 tablesp. milk.

Prove an omelet pan and put in the butter. Flake the fish, beat the yolks and add to them the milk, seasoning and fish. Fold in the stiffly whisked whites. Heat the butter, pour in the mixture and stir about three times over the fire to blend with some of the butter. Place the omelet in a moderate oven and bake for 8-10 minutes till well risen, set and lightly

browned. Fold, and serve garnished with lemon and parsley.

### FISH SALAD (A.T.D.S.)

1 lb. cooked fish, lettuce, watercress, endive, mustard, cress.

Take the fish from the bones and thoroughly mix with  $\frac{1}{4}$  pt. well-seasoned salad dressing. Arrange in a bowl with lettuce, etc.

### FEATHERED EGG (A.T.D.S.)

1 egg, a little butter, salt, parsley.

Beat the white with a little salt to a stiff froth, make the butter very hot in a pan, put in the white, and quickly drop the yolk in the centre. Cover and cook for 2 or 3 minutes. Decorate with a little chopped parsley.

### SWISS EGGS

Spread 1 oz. butter on the bottom of a fireproof dish, and lay in it some thin slices of cheese; break in 3 eggs, keeping the yolks whole. Add seasoning and a tablespoonful of chopped parsley mixed with 2 oz. of grated cheese. Bake in a moderately quick oven until the eggs are just set. Serve in the same dish.

### MINCED VEAL (M.)

Mince some cold veal, melt 1 oz. dripping in a pan and fry in it 1 tablesp. chopped onion to a golden brown. Take out the onion and stir in  $\frac{1}{4}$  oz. flour. Cook gently until brown and then slowly add  $\frac{1}{4}$  pt. white stock. Stir and bring to boiling-point.

Season very carefully and cool a little, then add 5-6 oz. veal and warm slowly but thoroughly.

[Serve with something which adds colour and character to the dish, e.g. a green vegetable.]

### VEAL STEW (M.)

1 lb. veal, 4 oz. bacon, 1 oz. flour,  $\frac{3}{4}$  pt. white stock, small onion, seasoning

Cut up the veal and bacon, fry the bacon slightly, add a little more fat and fry the veal. Remove both from the pan and brown the flour in the fat which remains in it. Add the stock or water gradually and bring to the boil, stirring carefully. Put back the veal and bacon, add the sliced onion and a little seasoning and simmer gently for 2 $\frac{1}{4}$  hours. Before serving add a teaspoonful of lemon juice.

### CHICKEN MOULD (D.T.)

Mince a breast of chicken and add an equal bulk of fine breadcrumbs, a small piece of butter and some seasoning. Pour over this mixture half a gill of hot milk and let it stand for fifteen minutes. Add a well-beaten egg and turn the mixture into a small buttered mould. Cover with buttered paper and steam gently for 20 minutes. Serve with white sauce.

### MINCED CHICKEN (D.T.)

Take the breast of a cooked chicken and chop it small. Put it into a small pan with a teasp. of chicken broth, a tablesp. of cream and a little seasoning. Let it get warm very slowly—it must

on no account boil. Serve on hot toast and garnish with parsley and cut lemon.

### STEWED SWEETBREAD (B.)

1 heart sweetbread (calf's),  $\frac{1}{2}$  pt. white stock or milk, 1 tablesp. cream,  $\frac{3}{4}$  oz. butter,  $\frac{3}{4}$  oz. flour, lemon juice, seasoning.

Soak the sweetbread in cold water and a little salt for 1 hour, then blanch it. Place it in cold water and remove any gristle or fat. Put it into a white-lined pan and just cover it with the stock or milk. Simmer very gently for 1 hour, or until tender. Make a coating sauce, using the liquor from the sweetbread. Add the cream, seasoning and lemon juice. Pour the sauce over the sweetbread and garnish with parsley.

### STEAMED VEAL

Cut the veal into small blocks, and half cover them with cold milk, adding a little salt. Cover the basin with buttered paper and steam for two hours. Make a sauce with the liquid and a little added milk, flour, butter, cream and seasoning.

### EGGS IN TOMATOES (D.T.)

6 large tomatoes, 6 small eggs, seasoning, 3 oz. grated cheese, 6 squares of fried bread.

Cut a small piece from the top of each tomato and carefully scoop out some of the pulp. Season the insides with salt and pepper and sprinkle in each  $\frac{1}{2}$  teasp. of grated cheese. Break the eggs one at a time into a cup and pour one into each tomato. Cook in a moderate oven until the eggs are set. Serve hot on the squares of bread.

BEEF-TEA 'JELLY

In 1 pint of good beef-tea slowly dissolve  $\frac{1}{4}$  oz. of powdered gelatin. Pour into a wet mould and set aside till firm.

SAVOURY CUSTARD (A.T.D.S.)

$\frac{1}{4}$  pt. good beef-tea, 1 egg, salt (if allowed).

Beat the egg, add the beef-tea and pour into a buttered basin or cup. Cover with buttered paper and steam very gently for about 20 minutes.

GRUEL (B.)

$\frac{1}{2}$  oz. oatmeal flour or "groats,"  $\frac{1}{2}$  pt. milk, sugar or salt.

Mix the groats with a little cold water. Boil the milk and pour it over the groats, stirring well. Stir and boil for 15-20 minutes. Season with sugar or salt (or both).

CUP OF ARROWROOT (B.)

1 teasp. arrowroot,  $\frac{1}{2}$  pt. milk, 1 teasp. castor sugar.

Mix the arrowroot with a little cold milk, boil the remainder of the milk and pour it over the arrowroot, stir and boil for 7-10 minutes, add the sugar and serve.

BANANA PUDDING (D.T.)

3 bananas, 2 oz. butter, 2 oz. flour, 2 oz. castor sugar,  $\frac{1}{4}$  teasp. baking powder, 2 eggs, milk, lemon rind and juice.

Peel the bananas and cut in thin slices, using a silver knife. Cream the butter and sugar and add the grated

rind of  $\frac{1}{4}$  lemon. Add the eggs and flour by degrees, beating well. Pour in 2 tablesp. milk, add the bananas and 1 teasp. lemon juice. Mix very lightly so as not to break the bananas. Add the baking powder at the last, pour into a well-greased basin, cover with greased paper and steam for 1 hour. Serve with lemon or orange sauce.

### RICE SOUFFLÉ (D.T.)

2 oz. Carolina rice, 2 oz. sugar, 2 oz. butter,  $\frac{1}{2}$  pt. milk, 3 eggs, salt, flavouring.

Cook the rice in a double saucepan, or a steamer, with the milk, butter, sugar and salt, until quite soft. Take from the fire and beat well with a whisk. Add any flavouring liked and the egg-yolks. Whisk the whites stiffly and stir lightly into the mixture. Pour it into a buttered soufflé tin and steam gently until well risen and firm to the touch (30-40 minutes). Serve with custard, jam, fruit sauce or cream.

### CHERRY MOULD (A. AND N.)

1 lb. cherries, 4 oz. sugar,  $\frac{3}{4}$  pt. water, lemon juice,  $\frac{3}{4}$  oz. gelatin,  $\frac{1}{4}$  pt. double cream, cochineal if necessary.

Stone the cherries and cook them with the sugar, water and lemon juice until tender. Strain the syrup, make it up to  $\frac{3}{4}$  pt. if necessary and return it to the saucepan. Melt the gelatin in the syrup. Rinse out a border mould and put in the cherries. Strain the melted gelatin over them and leave it to set. Turn out, then whip the cream, sweeten and flavour it and pile in the middle. Sprinkle it with a little castor sugar.

### PORT WINE JELLY (B.)

1 gill port, 1 gill water, 1 dessertsp. red currant jelly, 1 oz. loaf sugar,  $\frac{1}{2}$  inch cinnamon stick, rind and juice of 1 lemon,  $\frac{1}{4}$  oz. gelatin, cochineal if necessary.

Put all the ingredients into a white-lined pan and stir over heat until the gelatin is dissolved. Strain through muslin and if desired colour with cochineal. When cold, pour into wine-glasses or small moulds.

### ORANGE JELLY (B.)

$\frac{1}{2}$  pt. water,  $\frac{1}{2}$  pt. orange juice, juice of 2 lemons, rind of 3 oranges, 3 oz. loaf sugar, 1 oz. gelatin.

Put the water, sugar, orange rind and gelatin into a white-lined saucepan and stir until dissolved. Cover and allow to stand for 10 minutes, then strain into a basin. Add the orange and lemon juice, and pour into a wet mould to set. Serve with whipped cream.

### MILK JELLY (B.)

1 pt. milk,  $\frac{1}{4}$  oz. gelatin,  $1\frac{1}{2}$  oz. castor sugar, lemon rind.

Heat the milk with a little lemon rind, add the gelatin and sugar and stir gently until dissolved. Strain into a basin and stir occasionally until the jelly begins to thicken. Pour into a wet mould to set.

### ISINGLASS BLANCMANGE (A.T.D.S.)

$\frac{1}{4}$  oz. isinglass, vanilla pod or other flavouring, 1 pt. milk, sugar.

Put the milk, isinglass, sugar and vanilla pod into a



jug and let it stand in a saucepan of boiling water. Stir from time to time and slowly melt the isinglass. Strain through muslin into a wet mould to set.

### EGG JELLY (B.)

2 eggs, 6 oz. loaf sugar,  $\frac{3}{4}$  oz. gelatin, 2 lemons, cold water.

Wash the lemons, rub the sugar on the rind to extract the flavour, squeeze out the juice and make up to 1 pt. with cold water. Beat the eggs and put all ingredients into a white-lined saucepan. Stir over the fire till the eggs begin to thicken, but do not boil the mixture. Strain and pour into a wet mould to set.

### A SHAPE OF STRAWBERRY JELLY (G.)

Bruise a pint of fresh-gathered strawberries with  $\frac{1}{2}$  lb. of lump sugar. Let it stand for 2 hours; strain through a jelly-bag. Add an ounce of dissolved isinglass, skimmed, strained and cool. Mix the whole well together and add the juice of half a lemon. Pour it into a shape and let it stand in a cool place till wanted.

### OATMEAL JELLY (C.)

3 oz. oatmeal, 1 quart. water.

Soak the oatmeal in warm water for 1 hour. Bring it to the boil and let it simmer for 3 hours. While hot, strain through muslin into a scalded jug. Cover loosely and cool it rapidly in running water. Keep in a cool airy place and make it fresh every day.

### BREAD JELLY (C.)

4 oz. stale bread, water.

Soak the bread in a large quantity of water for 8 hours. Squeeze out the water and add 1 pint of fresh water. Boil for 1½ hours in a double saucepan, rub through a hair sieve and put aside to set.

### EGG JUNKET

To 1 teacupful of tepid milk, add a teaspoonful of castor sugar, the beaten yolk of an egg and sufficient rennet to form a junket. Set aside till firm.

[Pleasing variants of the ordinary junket may also be made by adding a little strong coffee to the milk or by dissolving a little plain block chocolate in it.]

### ARROWROOT PUDDING (B.)

1 oz. arrowroot, 1 oz. castor sugar, 1 pt. milk, 1 egg, vanilla.

Mix the arrowroot to a smooth paste with a little of the milk. Boil the rest and pour it over the paste, stirring well. Put into a pan, bring to boiling-point and cook for 10 minutes, stirring all the time. Take from the fire, add sugar, vanilla and egg-yolk and mix thoroughly. Fold in lightly the stiffly whisked white, pour into a buttered pie-dish, and bake in a moderate oven for 40 minutes.

[Similar puddings can be made with semolina, corn-flour, or ground rice instead of arrowroot.]

### APPLE SNOW (B.)

1 lb. apples, 2 oz. castor sugar, strip of lemon rind, 2 tablesp. water, 4 sponge cakes, 2 egg-yolks, ½ gill milk, ½ oz. castor sugar, vanilla, 2 egg-whites, cherries, angelica.

Stew the apples with the sugar, lemon and water,

and rub them through a sieve. Make a custard sauce with the yolks, milk,  $\frac{1}{4}$  oz. sugar and vanilla. Place the sponge cakes in a deep dish and pour the custard over them. Whip the whites, add them to the apple pulp and whisk till white and stiff. Pile on top of the custard and decorate with cherries and angelica.

## CHAPTER III

### CONSTIPATION

THIS malady, arising from varied causes, seems to be one of the pests of present-day civilisation. Many medical and scientific men go so far as to say that a great proportion of the most common bodily ills may have been caused by it or at least aggravated.

Whatever its remote cause, the chief symptom is a sluggish action of the large intestine, making it difficult or impossible for the body to get rid of many of its waste products. Food can play a very active part in the remedy and our main concern in this matter is two-fold, viz. :

(1) To give a considerable amount of indigestible material which in trying to get away will encourage the lazy bowel to work.

(2) To give foods which through their chemical nature will favour the necessary movement.

<sup>1</sup> Thus, if the digestive powers are good we may give bulky foods (e.g. many vegetables), foods which are slightly irritating (e.g. figs, nuts, onions, wholemeal flour, oatmeal, pulses, etc.), others which are mechanically laxative (e.g. water, oil, etc.), or which will give the necessary organic acids (e.g. fruits, vegetables), or which work by fermentation (e.g. honey, treacle, etc.).

Honey, treacle, marmalade, in addition, help the purely mechanical action, and fat and oils do so by

<sup>1</sup> See Sanford Blum : *Practical Dietetics*.

lubricating and so preventing the irritation which cellulose would in some people set up.

Proteins, both animal and vegetable, will of course have their own place in this diet, but do not need any special emphasis.

The most useful beverage is water, preferably taken cold on rising. If the natural water of the district has too much lime, Salutaris may be used instead. Cider is good if the patient can take it without discomfort. Red wines, sherry, strong tea and coffee should be avoided.

#### POTATO AND LEEK SOUP (Ec.)

1½ lb. potatoes, 4 large leeks, 2 qrts. water or stock,  
3 oz. rice, seasoning.

Slice the potatoes and leeks, add them to the boiling water or stock and boil for 10 minutes. Add the other ingredients and simmer till all are thoroughly cooked.

#### POTATO SOUP (D.T.)

1 lb. potatoes, 2 onions, 4 sticks celery, 1 pt. milk,  
½ pt. water (or veal or chicken stock), 1 oz. butter,  
2 tablesp. chopped ham, seasoning, 1 tablesp.  
semolina.

Slice the potatoes, onions and celery. Melt the butter in a lined pan and toss the vegetables in it. Add the water or stock and ½ pt. of the milk and boil gently until the vegetables are soft. Rub through a sieve or colander and return to a clean pan. Add the remaining milk and bring to the boil. Shake in the semolina and cook this until quite clear and well mixed in the soup. Season well and add the chopped ham.

## CELERY SOUP (D.T.)

2 heads celery, 2 oz. butter, 1 good-sized onion,  $\frac{1}{4}$  oz. flour, 1 pt. white stock,  $\frac{1}{2}$  pt. milk, seasoning.

Wash the celery well. Cut up the white parts into small pieces. Melt the butter in a lined pan and toss the onion and celery in it for 5 minutes. Add the stock and boil gently until the celery is soft. Rub through a sieve and return to a clean pan. Season carefully, mix the flour with the milk, pour into the soup and boil for 5 minutes.

## PALESTINE SOUP (D.T.)

1 lb. Jerusalem artichokes, 2 sticks celery, 2 onions, 1 pt. white stock or water,  $\frac{1}{2}$  pt. milk, 1 oz. flour, 1 bay leaf, parsley, seasoning, 1 oz. bacon fat or butter.

Peel the artichokes into cold water containing a little vinegar or lemon juice. Slice thinly and put into a lined pan. Add the fat, sliced onion and chopped celery. Cover and simmer for 10 minutes without browning. Add the bay leaf, a few parsley stalks, seasoning and stock or water. Simmer until the vegetables are tender, then rub through a sieve or colander and return to a clean pan. Mix the flour and milk, add to the soup and boil for 5 minutes.

## LEEK SOUP (G.)

Put the water that has boiled a leg of mutton into a boiler with some pepper and salt and a quantity of chopped leeks. Simmer them 1 hour. Mix a teacupful of oatmeal with cold water quite smooth, pour it into the soup and let it simmer gently for  $\frac{1}{2}$  hour. This soup requires to be stirred pretty often, to prevent it from burning at the bottom.

## OATMEAL SOUP (A.T.D.S.)

1 oz. medium or fine oatmeal, 1 onion, 1 carrot,  
1 leek, 1 oz. fat, 1 pt. stock,  $\frac{1}{2}$  pt. milk, seasoning.

Fry the chopped vegetables, add the oatmeal and stir well. Add the stock and simmer gently for 45 minutes, then add the milk and seasoning and boil up.

## QUAKER SOUP (S.)

2 tablesp. Quaker or Provost Oats, 1 qrt. water, 2 oz. butter, 2 tablesp. flour, 1 egg, seasoning, a little milk.

Boil the water, sprinkle in the oats and cook until tender. Add 2 oz. butter worked with 2 tablesp. flour. Cook again for 10 minutes, then rub through a sieve. Return to rinsed saucepan, add the well-beaten egg and seasoning, reheat but do not boil. If too thick, add a little milk.

## SAVOURY OATMEAL PUDDING (B.)

8 oz. medium oatmeal, 1 large onion chopped, 3-4 oz. chopped suet, seasoning, 1 gill water.

Mix all the dry ingredients and add enough water to bind. Press into a greased basin, steam for 2 hours, and serve with gravy or brown sauce.

## TREACLE LAYER PUDDING (B.)

$\frac{1}{2}$  lb. suet crust, 1 gill golden syrup, 3 tablesp. bread-crumbs.

Line a greased basin with half the suet crust and cut the remaining half into 3 pieces, graded in size. Mix the crumbs with the syrup and put a little into

the lined basin. Roll out the smallest piece of crust and fit it into the basin over the syrup mixture. Repeat these layers, finishing with crust. Cover with a damp, floured cloth and steam for 2½ hours.

## PRUNE AND ORANGE JELLY (M.)

¾ lb. prunes, 2 oz. sugar, ½ pt. water, 2 oranges, ¼ oz. gelatin, 1 cinnamon stick.

Wash the prunes and soak overnight in cold water. Put into a saucepan with the thinly peeled orange rind, cinnamon and sugar and cook slowly until tender. Pass through a sieve, rubbing through as much of the pulp as possible. Soak the gelatin in strained orange juice, add to the prune pulp, bring slowly to the boil, stirring all the time. Pour into a wet mould to set. Serve with cream.

## ORANGE AND BANANA SALAD (M.)

3 oranges, ¼ teacupful water, 2 tablesp. chopped nuts, 2 bananas, 1 oz. sugar.

Peel 2 oranges, removing all the pith. Cut in thin slices with a silver knife. Peel and slice the bananas. Arrange the fruit in layers in a dish and sprinkle each layer with chopped nuts. Boil the sugar and water together for about 10 minutes. Add the juice of the third orange and, if liked, 1 teasp. lemon juice. Strain over the fruit and serve with cream.

## FIG OR DATE PUDDING (M.)

¾ lb. wholemeal flour, 6 oz. chopped figs or dates, ¼ lb. breadcrumbs, 1 or 2 eggs, ¼ lb. suet, salt, ¼ lb. brown sugar, 1 teasp. baking powder, milk to mix. Chop the suet finely and mix all the dry ingredients.



Add the beaten eggs and enough milk to make a stiff batter. Steam  $2\frac{1}{2}$ –3 hours.

#### GOLDEN PUDDING (M.)

$\frac{3}{4}$  lb. wholemeal flour,  $\frac{3}{4}$  lb. suet,  $\frac{3}{4}$  lb. syrup,  $\frac{3}{4}$  lb. breadcrumbs, 1 egg, a little milk, salt,  $\frac{1}{2}$  teasp. bicarb. of soda,  $1\frac{1}{2}$  teasp. ground ginger.

Chop the suet finely. Mix all the dry ingredients except the soda. Warm the syrup and add it and the beaten egg. Dissolve the soda in a little hot milk or water, add it to the other ingredients and mix with milk to a stiff batter. Put into a greased basin and steam for  $2\frac{1}{2}$ –3 hours.

#### BANANA MOULD (M.)

1 pt. milk, 2 bananas, 2 egg-yolks, 1 oz. sugar, 1 oz. cornflour, vanilla.

Mix the cornflour with a little milk. Boil the rest of the milk with the sugar, add it to the cornflour and boil for 5 minutes. Cool a little. Beat the yolks and add them to the cornflour mixture. Cook a little without boiling. Cut up the bananas and add them and the vanilla. Pour into a wet mould to set.

#### RHUBARB MOULD (M.)

2 lb. rhubarb, 1 oz. gelatin, few drops cochineal,  $\frac{3}{4}$  pt. water,  $\frac{3}{4}$  lb. white sugar, rind and juice of 1 lemon.

Wash and cut up the rhubarb and put it into a saucepan with 1 tablesp. of water and the lemon rind. Cover and cook to a pulp. Add sugar and gelatin and dissolve. Remove lemon rind, add cochineal, stir well and mould.

## OATMEAL PUDDING (B.)

2 oz. rolled oats, 1 oz. sugar,  $\frac{1}{2}$  pt. water,  $\frac{1}{2}$  pt. milk.

Put the oatmeal, sugar, milk and water into a greased pie-dish and bake slowly for  $1\frac{1}{2}$  hours.

## TREACLE PUDDING (B.)

4 oz. flour, 2 oz. suet,  $\frac{1}{4}$  teasp. bicarb. soda, salt, 1 teasp. ground ginger,  $\frac{1}{2}$  gill treacle,  $\frac{1}{2}$  gill milk, 1 egg, treacle sauce or cornflour sauce.

Chop the suet very finely and put it into a basin with the flour, soda, salt and ginger. Beat the egg, add the treacle and milk and stir these into the flour mixture. Put into a greased basin, cover with greased paper and steam for  $1\frac{1}{2}$  hours. Turn out the pudding and pour sauce over it.

## WHOLEMEAL FRUIT BREAD (D.T.)

1 lb. wholemeal, 3 oz. sugar, salt, 3 oz. butter, 1 teasp. baking powder, 3 oz. sultanas (or seedless raisins), 3 oz. chopped walnuts, 2 eggs,  $\frac{1}{2}$  pt. milk.

Rub the butter into the flour, add all the other dry ingredients and mix well, then add the well-beaten eggs and milk. Beat again. Put into 3 greased loaf tins and bake  $\frac{3}{4}$  hour in a moderate oven.

## WHOLEMEAL GINGERBREAD

$1\frac{1}{4}$  lb. wholemeal, 1 lb. treacle,  $\frac{1}{4}$  lb. brown sugar,  $\frac{1}{4}$  lb. butter,  $\frac{3}{4}$  oz. caraway seeds crushed,  $\frac{3}{4}$  oz. ginger,  $\frac{3}{4}$  oz. chopped lemon peel,  $\frac{1}{2}$  pt. milk, 1 teasp. bicarb. of soda.

Mix all the dry ingredients except the soda. Dis-

solve the soda in the treacle and milk made lukewarm. Add to the mixture. Put into a greased baking-tin and bake in a slow oven for about  $1\frac{1}{2}$  hours.

### GINGERBREAD NUTS (G.)

2 lb. of sifted flour, 2 lb. of treacle,  $\frac{3}{4}$  lb. brown sugar,  $\frac{1}{2}$  lb. candied orange peel cut small,  $1\frac{1}{2}$  oz. ground ginger; all-spice, caraways, and corianders mixed together, 1 oz.;  $\frac{3}{4}$  lb. butter, oiled.

Mix all well together, and set by for an hour or more. Take pieces about the size of a walnut and roll them round with the hand; lay these balls in rows on a baking-tin. Press them a little with the hand to flatten them. Bake in a hottish oven, 10 minutes.

### QUAKER OAT BISCUITS (D.T.)

2 teacupfuls Quaker oats, 1 teacupful granulated sugar,  $\frac{1}{2}$  teacupful melted butter, 1 egg.

Mix the ingredients well together with the beaten egg. Put the mixture on a well-buttered baking-tin in spoonfuls far apart, as they will spread. Bake in a moderate oven for 20-30 minutes.

### DATE BREAD (A. AND N.)

1 lb. wholemeal, salt,  $\frac{1}{2}$  oz. yeast, 1 teasp. sugar, 3 oz. stoned and chopped dates, 1 oz. chopped walnuts, about  $\frac{1}{2}$  pt. warm milk.

Mix the wholemeal, salt, dates and walnuts in a bowl. Cream the yeast and sugar and add the milk. Pour into a well in the wholemeal and stir together. Turn on to a floured board and knead well; return to the bowl, cover and put to rise in a warm place for

$\frac{3}{4}$  hour. Knead again and shape into a loaf. Put into a floured tin, prick and put to rise for  $\frac{1}{2}$  hour, then bake.

## PARKIN (B.)

12 oz. medium oatmeal, 4 oz. margarine or lard, 8 oz. treacle, 1 teasp. ground ginger, about  $\frac{1}{2}$  gill milk or water, 4 oz. flour, 2 oz. brown sugar,  $\frac{1}{2}$  teasp. bicarb. of soda, grated lemon rind or chopped peel.

Mix the oatmeal, flour, peel and ginger. Heat the treacle, fat and sugar, add to the dry ingredients and mix thoroughly. Mix the soda with a little milk or water, add it and beat well. Spread the mixture on a greased tin and bake for 1-1 $\frac{1}{2}$  hours in a moderate oven.

## OATMEAL BISCUITS (B.)

5 oz. flour, 7 oz. medium oatmeal, 4 oz. butter, 1 egg,  $\frac{1}{4}$  teasp. baking powder, 1 teasp. castor sugar, salt.

Sieve the flour, baking powder and salt. Rub the fat into the flour and add the oatmeal and sugar. Mix the egg with a little water and add enough to make a stiff dough. Roll out thinly, cut in round, square or oblong pieces and mark neatly with a knife. Bake in a moderate oven for 15-20 minutes.

## OATCAKES (B.)

4 oz. medium oatmeal, 1 oz. fine oatmeal, salt, pinch of bicarb. of soda, boiling water, 1 teasp. melted bacon fat or dripping.

Mix the medium oatmeal with the soda and salt. Add the dripping and hot water to make a soft mixture. Sprinkle a pastry-board with fine oatmeal,

turn out the mixture and form into a smooth ball. Knead slightly with the knuckles to flatten out the ball, and rub in some fine oatmeal to whiten the cakes. Roll out thinly to a circle and rub again with oatmeal. Cut across in triangular pieces. Place on a hot girdle and bake till the edges curl up, but do not brown. Toast in front of the fire or in an oven till crisp and dry. Store in a tin.

## CHAPTER IV

### OBESITY

THE cause of obesity most usually is that the patient's food supplies him with more energy than he can or will expend in work, leaving a surplus which is stored in the fatty tissues of the body. A reasonable course is therefore either to reduce the caloric value of the food or to increase muscular energy, or perhaps, better still, to do a little of each.

In reducing calories we need to bear in mind the following facts :

(1) That protein probably is converted into fatty tissue much less easily than actual fat and carbohydrate.

(2) That it is undesirable to supply anything which tends to excite appetite.

(3) That bulk with little caloric value will be of some use in practising a harmless deception on a patient.

There are many so-called "classical" cures for severe obesity, notably that advocated by Banting. In most of them the full value of the food is reduced to 1,500-1,000 Calories per day.

Banting's system especially emphasises the use of protein, but this, it must be remembered, not only tends to increase the general power of assimilating food, but also puts a great strain on the kidneys. Others lay varying stress on the restriction of fat and carbohydrate.

Hutchison advises great moderation in fat and carbohydrate, exercised, for instance, in taking away all visible fat from meat, and avoiding "richer meats and fatter fishes"; in moderating the use of milk, cream, cheese, etc., in restricting bread and potatoes, and forbidding other roots and tubers, puddings and sugar, as well as dried fruits, made dishes, thick soups, sauces and pastry. Coarse breads or patent diabetic breads are of some use, and saccharin or a similar patent may be used instead of sugar.

Spices and condiments increase appetite and too great variety tends to do the same. These therefore should be avoided. The actual bulk of such things as mushrooms and green vegetables is sometimes very useful. Cocoa, though often forbidden, is useful in that it easily satisfies.

#### BAKED COD STEAK (B.)

1 lb. cod steak, 1 dessertsp. seasoned flour, 1 tablesp. dripping, lemon, parsley.

Wash and prepare the fish and dry it well. Heat the dripping in a tin, dust the fish with the seasoned flour, place it in the hot dripping and baste it. Bake in a moderate oven for about 20 minutes, basting occasionally. Serve garnished with lemon and parsley.

[Hake, plaice, whiting, fresh haddock may be prepared in the same way.]

#### STEAMED SOLE (D.T.)

Fillet, wash and dry the fish. Sprinkle with salt and lemon juice and put it on a buttered plate. Cover with buttered paper and steam gently over a pan of

boiling water until the fish is quite white and creamy. Serve at once on a hot plate, garnished with parsley ; pour some of its own liquid round and serve brown bread and butter separately.

[Other kinds of steamed white fish would also be suitable, as well as boiled cod or hake, served either without sauce or with a very small amount of it.]

### SALAD OF COLD FISH (A.T.D.S.)

Cold fish (cod, sole or whiting), lettuce, cress, a simple dressing.

Remove the skin and bone and divide the fish into small pieces. Wash and prepare the salad, laying some aside for garnish. Cut up the rest, add the fish and a very small quantity of dressing ; toss lightly together and arrange in a bowl, garnishing with the smaller lettuce leaves and cress.

### EGGS WITH MUSHROOMS (D.T.)

3 eggs,  $\frac{1}{4}$  lb. mushrooms, 1 shallot, butter, seasoning, lemon juice.

Chop all but 3 mushrooms rather coarsely. Fry the chopped shallot in a little butter until brown. Add all the mushrooms, season to taste, add a little lemon juice, cover the pan and cook gently for 10 minutes. Poach the eggs and serve with the chopped mushrooms arranged round, and a whole mushroom on top of each egg.

### SCRAMBLED EGGS IN TOMATOES (M.)

Choose some suitable tomatoes, cut them across and scoop out the insides. Scramble one or two eggs,



adding the insides of the tomatoes. Slightly bake the tomato cases, fill up with the mixture, make quite hot and serve.

### EGGS IN SPINACH CASES (M.)

Line the bottom and sides of a small buttered fire-proof dish with hot spinach, seasoned and chopped. Break an egg into the hollow, season and cook in a moderate oven until the egg is set.

[Other simple egg dishes are useful, e.g. Steamed, Poached, Scrambled, Baked Eggs, Egg Salad, etc.]

### TOMATOES AND MUSHROOMS (M.)

2 oz. mushrooms, 2 tomatoes, 1 teasp. chopped parsley, few slices of onion, butter, seasoning.

Peel and chop the mushrooms and fry them and the onion in a little butter. Mix with parsley and seasoning. Cut the tomatoes in half across. Take out a little of the inside and add to the mushroom mixture. Refill with mixture, bake on a greased tin and serve garnished with parsley.

[The following dishes are also suitable: Lean ham, mutton, beef, rabbit, poultry, cooked in the more simple ways, and as far as possible without sauces, or other additions.

Vegetables, especially boiled green vegetables and fresh green salads.]

### GOOSEBERRY JELLY

2 lb. green gooseberries, 1 pt. water, saccharin, lemon, 1 oz. gelatin.

Put the gooseberries into a pan with the water,

saccharin and lemon rind. Let them stew gently to a pulp, then rub through a sieve. Melt the gelatin in a little water and strain into the purée. Add the strained lemon juice and turn into a wet mould to set.

[We may add : Stewed Gooseberries, Plums, Damsons, Rhubarb, Green Apples.

Fruit Salad, made with sourer fruits.]

## CHAPTER V

### THINNESS

EACH normal individual in good health seems to need his own peculiar share of stored-up fat, which serves a number of purposes. When for any reason nutrition is disturbed, the effect is seen first of all in the loss of this store, as in long or acute illness, in wasting diseases such as tuberculosis, as a result of constant dyspepsia or other forms of defective assimilation, and in various kinds of nervous disorders.

We have seen that in obesity we must reduce the amount of food to what is absolutely necessary for life and output of bodily energy: in underweight we must try to bring about an excess of food over life and energy. One obvious device is to reduce energy, and hence the insistence upon rest cures. Weir Mitchell, one of the best-known advocates, describes his own treatment as "a combination of entire rest and of excessive feeding, made possible by passive exercise obtained through the steady use of massage and electricity."

Mere excess of food is, of course, valueless unless actual assimilation is in excess of output, and storage thus becomes possible. First, then, we must aim at increasing the general nutritive value of the food consumed and then must use all possible aids to assimilation, such as fresh air and exercise, suitable stimulants, tonics, change of air and scene, etc. Incidentally

these things will give the best chance of improving the quality and quantity of the blood, which seems to be a necessary accompaniment of healthy fattening.

We shall insist upon the best grades of protein, fat, and carbohydrate, and a choice of food and cookery which is likely to encourage good digestion. An adequate supply of good fat is important because it is easy to store. With it must go a due supply of carbohydrate, both because it helps the digestion of fat and also because it, too, can be converted into fat and then stored.

Storage of protein is more difficult, but this also can to some extent be achieved through enrichment of the blood and improvement of the muscles by suitable exercise, or by restoring to them what they may have lost in acute illness. The supply of protein can, as always, be indirectly affected by attending to that of the protein-sparers, thus reserving protein for its own peculiar business of body building.

Mineral Salts, Water, Roughage and Vitamins will all make their special contribution in effecting good nutrition.

### MILK SOUP (B.)

1 lb. potatoes, 1 pt. water or white stock, 1 onion,  
1 stick celery, 1 oz. butter or dripping, seasoning,  
1 teasp. flour, 1 gill milk.

Cut up the vegetables and fry them in the fat in a white-lined saucepan. Add the water, bring to simmering point, cover and simmer for 1 hour. Rub through a sieve. Add the flour and milk and boil for 5 minutes. Season, and serve with fried dice of bread.

## TAPIOCA CREAM SOUP (B.)

$\frac{1}{2}$  pt. white stock,  $\frac{1}{4}$  oz. tapioca groult, 1 egg-yolk,  
 $\frac{1}{4}$  gill milk,  $\frac{1}{4}$  gill cream, seasoning.

Boil the stock, sprinkle in the tapioca and seasoning and simmer for 15 minutes. Cook slightly, add the beaten yolk, cream and milk. Stir without boiling till the soup begins to thicken and the tapioca is suspended.

## RICE CREAM SOUP (M.)

3 oz. fillet of veal, 1 pt. milk, seasoning, 1 oz. rice, small pieces of onion.

Cut the meat into small pieces and put it with the washed rice and onion into an aluminium saucepan. Simmer for 3 hours, stirring occasionally, then pass through a sieve. Add the milk and seasoning and reheat, but do not boil.

## CREAM OF BARLEY (M.)

$\frac{1}{2}$  lb. lean veal,  $\frac{1}{2}$  oz. pearl barley,  $\frac{1}{2}$  pt. water, 2 tablesp. cream,  $\frac{1}{2}$  pt. milk, seasoning.

Wash the barley, cut up the veal and put them into a saucepan with the milk and water. Simmer gently for 3 hours. Rub through a sieve, reheat, season to taste and add the cream.

## BAKED STUFFED PLAICE (B.)

1 plaice, 2 tablesp. veal stuffing, beaten egg, browned crumbs, anchovy sauce.

Prepare the fish and cut off the head and fins. Cut a slit from the head half-way to the tail in the middle of the white side and slightly fillet the flesh from the bone. In the pocket so formed, place the stuffing and

pile up neatly. Coat with egg and browned crumbs. Place the fish in a tin with hot dripping and bake in a moderate oven for about 20 minutes, basting well. Serve with anchovy sauce poured round and garnish with lemon and parsley.

### CREAM OF WHITING (D.T.)

2 whiting, 2 oz. grated cheese, 1 egg, milk, 1 oz. butter, seasoning, 1 lb. potatoes, 1 gill white sauce, lettuce, salad dressing.

Steam the whiting, remove all skin and bone and flake the fish. Cook the potatoes and rub them through a sieve. Add to them about 2 tablesp. warm milk, the butter, melted, and the seasoning. Beat well, then add the fish, sauce, cheese and beaten egg-yolk. Beat until quite smooth, then stir in the stiffly whipped white of egg. Turn into a buttered mould and steam very gently for 20 minutes. Serve cold with lettuce and a simple dressing, or hot with a sauce.

### KIPPER PASTE

Take 2-6 fat kippers and fry slowly. Remove all skin and bone and pound very finely or rub through a sieve. Take half weight in sieved cooked haricot or butter beans. Add enough butter to make a paste and season carefully.

### EGG MOUSSE (D.T.)

Take 3 hard-boiled eggs and rub through a sieve. Skin and bone 12 sardines and rub these through the sieve. Mix the two with 2 oz. butter and moisten with a little cream. Season slightly. Serve daintily at breakfast or high tea, or use for savoury sandwiches.

## FISH MOULD (B.)

1 lb. fish, 2 oz. breadcrumbs, 4 oz. suet, 2 eggs, 1 gill milk or fish liquor, 1 teasp. chopped parsley, seasoning,  $\frac{1}{2}$  pt. egg sauce.

Skin and bone the fish and chop the suet finely. Put these into a mortar and pound well. Add the breadcrumbs, eggs, parsley, fish liquor and a little seasoning. Pound again and mix well. Put into a buttered mould, cover with buttered paper and steam gently for 1 hour. Coat with egg sauce and garnish with sieved yolk and parsley.

## FISH SOUFFLÉ

Make a panada (see p. 196) with 1 oz. butter, 1 oz. flour and  $\frac{1}{2}$  gill fish stock. Add 4 oz. finely pounded white fish, then add 2 well-beaten eggs and pound again. Add a little seasoning and 2 tablesp. of cream. Grease a soufflé tin, line with buttered paper, pour the mixture into the tin, cover with buttered paper and steam very gently for about  $\frac{3}{4}$  hour, when the mixture should be just set. Turn out, coat with white sauce and garnish with parsley.

## FISH IN BATTER (B.)

$\frac{1}{2}$  lb. cod steak, 2 oz. flour,  $\frac{1}{2}$  gill tepid water, 1 dessertsp. salad oil, salt, 1 egg-white, lemon and parsley.

Sieve the flour and salt, add the oil and tepid water, and mix to a smooth batter. Cover and set aside for  $\frac{1}{2}$  hour. Wash and dry the fish, remove skin and bone and cut into suitable pieces. Whip the egg-white stiffly and fold it into the batter. Dip the fish into the batter and fry it in deep fat. Garnish with lemon and parsley.

## BAKED FISH SOUFFLÉ (A.T.D.S.)

2 oz. white fish,  $\frac{1}{2}$  oz. flour,  $\frac{1}{2}$  oz. butter,  $\frac{1}{4}$  pt. milk,  $\frac{1}{2}$  teasp. anchovy essence, 1 teasp. cream, 1 yolk and 2 whites of egg, seasoning, parsley.

Make a white sauce with the butter, flour and milk and add the anchovy essence if liked. Chop the fish very finely and stir it in. Add seasoning and cool a little. Beat the egg-yolk and add it and the cream. Whip the whites stiffly and fold them in. Butter a casserole and fasten round it a stiff piece of buttered paper rising 2 inches above the top. Pour in the mixture and bake in a fairly hot oven for about 15 minutes. Remove the paper and serve quickly, garnished with parsley.

## SAVOURY FISH (R.)

$\frac{1}{2}$  lb. filleted fish, 2 tablesp. breadcrumbs (or rice),  $\frac{1}{2}$  onion grated (or grated lemon rind), seasoning, 1 teasp. parsley, 1 egg,  $\frac{1}{2}$  pt. milk, 1 tablesp. browned crumbs,  $\frac{1}{2}$  oz. butter.

Cut up the fish into small pieces and place in a greased pie-dish. Add to the beaten egg the milk, white crumbs, onion, parsley and seasoning, and pour this mixture over the fish. Scatter browned crumbs and add butter in small pieces. Place the dish in a tin with cold water and bake in a moderately hot oven until golden brown.

## FISH CUSTARD (M.)

Skin 1 or 2 fillets of sole or plaice, beginning at the tail-end and using a sawlike movement. Roll the fillets loosely with the skinned side inside. Beat up



an egg, add 1 gill milk and seasoning. Grease a small basin, pour in the custard and put in the fillets. Cover with greased paper and steam lightly for about 20 minutes or until the custard is just firm in the centre.

#### LIGHT FISH PUDDING (M.)

4 oz. cooked fish, 1 egg, 1 oz. fine breadcrumbs,  $\frac{1}{4}$  pt. milk, 1 oz. butter, seasoning.

Flake the fish finely, removing skin and bone. Warm the milk slightly and melt the butter in it. Beat up the egg-yolk and stir it into the milk. Add seasoning. Mix the fish and crumbs and pour the custard mixture over them. Whip up the white to a stiff froth and fold it in lightly. Bake in a moderate oven for about 20 minutes.

#### FRICASSÉE OF FISH (M.)

Take 1 lb. cooked fish, remove skin and bone and separate into flakes. Make a white sauce with 2 oz. butter, 2 oz. flour, 1 pt. milk and seasoning and warm the fish thoroughly in it. When quite hot, add some chopped parsley and 1 teasp. lemon juice. Serve on a hot dish and decorate with a border of sieved egg-yolk and little heaps of chopped white.

#### KIDNEY OMELET (B.)

3 eggs, seasoning,  $1\frac{1}{4}$  oz. butter, 1 sheep's kidney.

Wash and skin the kidney and remove the core; cut the kidney into dice and cook it in  $\frac{1}{2}$  oz. butter for about 20 minutes, seasoning carefully. Prepare an omelet with the eggs,  $\frac{1}{4}$  oz. butter and seasoning and

place the kidney in the centre. Roll up and serve at once.

[Button mushrooms or ham might well be used instead of kidney.]

### FRICASSÉE OF CHICKEN (D.T.)

Remains of boiled chicken, 1 oz. butter, 1 oz. flour, 1 egg-yolk, 1 dessertsp. lemon juice, mushrooms, cream, seasoning.

Melt the butter in a small pan, add the flour and stir well. Add  $\frac{1}{2}$  pt. of the chicken broth and stir until it has boiled 5 minutes. Season to taste. Beat the egg-yolk, stir in the lemon juice and 2 tablesp. cream and add this mixture to the sauce. Cut the chicken into small pieces and heat them gently in the sauce. Arrange in a hot dish and garnish with mushrooms fried in a little butter.

### FRICASSÉE OF VEAL (D.T.)

$\frac{3}{4}$  lb. cooked veal, 1 oz. butter, 1 oz. flour,  $\frac{1}{2}$  pt. veal stock, 1 or 2 egg-yolks, seasoning.

Take away all skin and gristle and cut the veal into small pieces. Melt the butter in a pan, add the flour, stir them well together, add the stock and stir until boiling. Put in the veal and heat very gently. Just before serving add about 1 dessertsp. of finely chopped parsley and 1 or 2 egg-yolks. Serve with rolls of bacon.

### CHICKEN SOUFFLÉ (D.T.)

8 oz. cooked chicken, 1 gill chicken broth, 2 oz. ham, 2 oz. butter, 2 level tablesp. flour, 4 eggs, seasoning, cream.

Melt the butter in a pan, add the flour and cook for a minute or two, smoothing out all lumps. Add the

broth and stir until boiling. Cook gently until this mixture (a panada) leaves the side of the pan. Set aside to cool. Mince the chicken and ham and mix with the panada. Season very carefully, add the egg-yolks and a tablesp. of cream and lastly fold in the stiffly whipped whites. Turn into a buttered soufflé-tin and steam gently for 45 minutes. Turn out carefully and serve with a good sauce.

#### CHICKEN CREAM (M.)

6 oz. raw chicken,  $\frac{1}{4}$  oz. flour, 1 oz. butter, 1 egg, 1 oz. fine breadcrumbs, 2 tablesp. cream,  $\frac{1}{4}$  pt. milk, seasoning.

Mince the chicken finely and pound it. Melt 1 oz. of butter, stir in the crumbs and flour, add the milk and mix well with the chicken and other ingredients. Pound again, then put into a greased basin, pressing it down well with a hot wet knife and smoothing the top. Cover with greased paper and steam for 45-50 minutes.

#### SWISS EGGS (D.T.)

3 or 4 eggs,  $\frac{1}{4}$  pt. thick cream, parsley, 1 heaped tablesp. grated cheese.

Butter a fireproof dish, pour in some of the cream, cover with half the cheese, bake for 4 minutes and cool slightly. Break in the eggs and add the remaining cream. Season, and sprinkle what is left of the cheese. Add a little chopped parsley and bake in a gentle oven until the eggs are just set.

#### GOLDEN BUCK (A. AND N.)

$\frac{1}{4}$  gill milk, 2 oz. grated cheese, 1 egg, 1 oz. butter, seasoning, buttered toast, a poached egg, parsley. Heat the milk in a saucepan and add the cheese, the

beaten egg and a little seasoning. Cook slowly without boiling until creamy, then add the butter. Pour over a round of toast and put the poached egg on top. Garnish with parsley.

#### EGGS WITH CHEESE SAUCE (D.T.)

Cook for 5 minutes as many eggs as are needed, then cool them in water and shell them. Dry them with a cloth and roll them lightly in flour. Dip them in beaten egg to which has been added some seasoning and 1 tablesp. water. Roll them in fine breadcrumbs and fry them in deep fat. Drain well and cut in two, removing a slice from the end so that they will stand. Arrange on a hot dish and pour round a good white sauce flavoured with grated cheese.

#### SCRAMBLED EGGS (D.T.)

Prepare some well-buttered toast and keep it very hot. Melt 1-2 oz. butter in a pan and add  $\frac{1}{4}$  gill milk, then 3 lightly beaten eggs. Season well. Now stir over moderate heat until beginning to set. Reduce the heat and stir until set. Take away the pan at once, as the mixture tends to become watery at this point. Serve quickly on the hot buttered toast.

[A little flaked white fish or chopped fat bacon would be a useful addition.]

#### CHICKEN OR VEAL CROQUETTES (M.)

3 oz. cold chicken or veal, 1 oz. ham,  $\frac{1}{2}$  pt. white stock or milk, 1 teasp. butter, 1 oz. flour, lemon juice, seasoning, 4 oz. flour, 2 oz. soft fat, salt cold water.

Boil together the stock and butter, stir in 1 oz. flour,

beat until smooth and cook for 5 minutes. Add the meat, minced, the seasoning and a few drops of lemon juice and leave to cool. Make a short pastry with 4 oz. flour, the fat, salt and water, roll out very thinly and cut in circles about 3 inches across. Put a little veal mixture on each round, damp the edges and press together. Coat with egg and breadcrumbs and fry in deep fat.

#### NUT CUTLETS (A.T.D.S.)

$\frac{1}{2}$  lb. shelled walnuts or Brazil nuts, 2 teasp. breadcrumbs,  $\frac{1}{2}$  teasp. onion juice, 1 egg, 1 teasp. lemon juice, ground mace, seasoning, 1 oz. butter, 1 teasp. flour, 1 gill milk.

Mix the grated nuts with the breadcrumbs, add half the butter, the onion juice, mace and seasoning. Melt the rest of the butter in a pan, mix in the flour and add the milk by degrees. When this panada thickens, add the other ingredients and mix well over the fire. Remove and stir in the beaten egg and the lemon juice. Mix all thoroughly and turn out to cool. Form into cutlets, coat with egg and crumbs (or oatmeal) and fry. Serve with tomato sauce.

#### BREAKFAST ROLL

1 lb. smoked ham, 1 lb. lean beef, 6 oz. breadcrumbs, 2 eggs, seasoning, ground mace.

Mince the meat, add the breadcrumbs, mace and seasoning, and mix thoroughly with the hands. Add the beaten eggs and mix again. Form into a roll, tie in a well-floured cloth, boil gently for 3 hours, and coat with browned crumbs or glaze when cold.

## EGG POACHED IN MILK (A.T.D.S.)

Boil a little milk, add salt, stir swiftly, cool slightly, and drop in the egg. Cook for a few minutes and serve on buttered toast.

## MACARONI À LA CRÈME (D.T.)

$\frac{1}{2}$  lb. cooked macaroni, 2 oz. grated cheese,  $\frac{1}{2}$  gill cream, 2 oz. butter, seasoning, toast.

Break the macaroni into 2-in. lengths. Melt the butter in a pan, add the cream and cheese and stir until hot. Put in the macaroni and stir until very hot. Season well and serve on hot buttered toast.

## CHEESE SAVOURY (M.)

1 oz. butter,  $\frac{1}{2}$  lb. breadcrumbs,  $\frac{1}{2}$  teasp. dry mustard,  $\frac{1}{2}$  pt. milk, 2 oz. grated cheese, 1 or 2 eggs, salt.

Melt the butter in the warmed milk. Mix the dry ingredients and pour the milk over them. Add the beaten yolks, beat up the whites to a stiff froth and stir in lightly. Put the mixture into a greased pie-dish and bake for about 15 minutes in a rather hot oven, or steam in a greased basin for  $\frac{1}{2}$  hour.

## SAVOURY BUTTER BEANS (B.)

$\frac{1}{2}$  lb. butter beans, 1 oz. margarine, 1 egg-yolk, 1 oz. cheese, 1 dessertsp. chopped parsley, seasoning, 1 tablesp. cream or milk.

Soak the beans overnight in cold water. Put them in a saucepan with fresh cold water and salt and boil till tender. Melt the margarine, drain the beans and

add them and all the other ingredients. Shake over the fire till very hot. Garnish with parsley.

### SAVOURY POTATOES (D.T.)

6 potatoes, 4 oz. cheese, 1 gill tomato sauce, 2 oz. breadcrumbs, seasoning.

Cook the potatoes until just tender and cut them into slices of medium thickness. Butter a pie-dish and put in a layer of potatoes, then some grated cheese and seasoning. Repeat these layers until all the potatoes are used and a little cheese is left. Now pour in the tomato sauce and for the top layer mix the cheese with the breadcrumbs. Brown in a moderately quick oven and serve very hot.

### EGG PUDDING (A.T.D.S.)

$\frac{3}{4}$  pt. milk,  $\frac{3}{4}$  lb. breadcrumbs, 2 oz. flour, 2 eggs,  $1\frac{1}{2}$  oz. sugar, strip of lemon rind.

Boil the milk with the lemon rind and pour it over the crumbs. Cover for 15 minutes, then beat it up. Add the sugar, flour and beaten eggs and mix well. Pour into a buttered mould sprinkled with granulated sugar, cover with buttered paper and steam for 1 hour. Serve with cream or sweet sauce.

### FRUIT PUDDING (A.T.D.S.)

Line a basin with sponge cakes which have been sliced in two. Stew some fresh fruit in the usual way and pour it while hot into the basin. Cover the top with sliced sponge cakes, put a plate and a weight on it and let the fruit get cold. Serve with custard sauce.  
[Or stale bread may take the place of sponge cakes.]

## SAGO CREAM (M.)

1 pt. milk, 1 oz. fine sago, 1 egg-yolk,  $\frac{1}{2}$  oz. sugar, pinch of salt.

Wash the sago and soak for a few hours in a little of the milk. Heat the remainder of the milk, add the sago and salt and cook until transparent, stirring all the time. Mix the yolk and sugar in a basin, cool the sago a little, then mix all together. Cook the egg slightly. Serve hot or pour into a mould to set.

## CARAMEL PUDDING (B.)

3 eggs,  $\frac{1}{2}$  pt. milk, 1 oz. castor sugar, vanilla, 2 oz. loaf sugar,  $\frac{1}{2}$  gill cold water.

Boil the loaf sugar and water quickly until they are of a light coffee colour. Pour this caramel quickly into a clean, dry, hot soufflé mould, so that it coats it all over. Beat the eggs with the sugar, milk and vanilla, strain them into the mould, cover with greased paper and steam very slowly for 40 minutes. Serve hot or cold.

## A FRENCH CHERRY PUDDING (G.)

Butter a pudding-basin and fill it quite full with morello cherries; put plenty of sugar to sweeten them. Make a batter with four whole eggs, a pint of milk, and two large tablespoonfuls of flour; pour it on the cherries in the basin. Tie a cloth over it and boil it an hour and a half. Damsons or plums or green gooseberries may be used instead of cherries. It is a delicious pudding.

## APPLE CHARLOTTE (A.T.D.S.)

Line a cake tin with fingers of bread dipped in melted margarine and put a round of the same at the



bottom. Pour in hot stewed apple, cover with another round of bread and bake until it is a golden brown.

### CHOCOLATE NUT PUDDING

3 oz. breadcrumbs,  $1\frac{1}{2}$  oz. butter,  $1\frac{1}{2}$  oz. castor sugar, 2 oz. block chocolate, 1 oz. crushed or minced nuts, 2 eggs,  $\frac{1}{2}$  gill milk, vanilla.

Dissolve the chocolate in the milk and allow to cool. Cream the butter and sugar and beat in the eggs. Add the crumbs, nuts, milk and chocolate, and the vanilla. Pour into a buttered basin and steam for 1 hour. Serve with cream or custard sauce.

### CHOCOLATE RICE

$2\frac{1}{2}$  oz. rice,  $\frac{1}{2}$  pt. milk,  $\frac{1}{2}$  pt. water, 1 tablesp. choc. powder or cocoa, 1 oz. butter, 1 good tablesp. sugar, 2 eggs, vanilla.

Boil the milk and water together. Add the rice and cook until it begins to soften. Add the butter, sugar and chocolate and, if the mixture is cool enough, add the beaten eggs and vanilla. Pour into a buttered mould and steam for 1 hour or into a pie-dish and bake for  $\frac{1}{2}$  hour.

### LEMON PIE (D.T.)

$\frac{1}{2}$  teacupful demerara sugar, 1 tablesp. cornflour, 2 tablesp. water, 3 eggs, 2 lemons,  $\frac{1}{2}$  teacupful castor sugar, short pastry.

Melt the demerara sugar in a pan. Mix the cornflour and water together until smooth and add to the sugar. Beat the egg-yolks well and add to the mixture. Add the grated rind of one lemon and the strained juice of two, and cook gently for 5 minutes,

stirring all the time. When it is quite smooth and creamy, remove it from the fire. Line a shallow plate or a pie-dish with some short pastry, fill it with the lemon mixture and bake for 25 minutes in a moderate oven. Whip the whites of eggs until very stiff and fold the castor sugar lightly into them. Cover the top of the pie with the meringue and bake until set and lightly browned.

#### DICK'S PUDDING (D.T.)

2 tablesp. golden syrup, 2 oz. butter, vanilla, stale bread, milk.

Cut a round or oval of stale bread, 2 inches thick. Pour over it a little milk flavoured with vanilla and let it stand  $\frac{1}{2}$  hour. Do not use too much milk, as the bread should remain firm. Melt the butter in a pan, add the syrup and mix, then put in the bread and cook for about 8 minutes, basting with the liquid. Serve hot, pouring over the bread any liquid still in the pan. Clotted cream is a good addition.

#### BAKEWELL PUDDING (B.)

Short crust pastry, 2 tablesp. red jam, 2 tablesp. lemon curd, 2 oz. butter, 3 oz. sugar, 3 oz. ground almonds, 3 oz. cake or breadcrumbs, 2 large eggs, rind and juice of  $\frac{1}{2}$  lemon.

Partially line a pie-dish with pastry so that it comes half-way down. Spread the bottom of the dish with jam and cover this layer with the lemon curd. Cream the butter and sugar and beat in the eggs. Add the almonds, crumbs, lemon juice and rind. Spread this mixture over the lemon curd and bake in a moderate oven for 1 hour.

## CHOCOLATE PUDDING (B.)

2 oz. chocolate, 1 gill milk, 3 oz. breadcrumbs,  $1\frac{1}{2}$  oz. butter,  $1\frac{1}{2}$  oz. castor sugar, 1 large egg, vanilla, custard sauce.

Dissolve the chocolate in the milk and allow to cool. Cream the butter and sugar and beat in the egg. Add the crumbs, the dissolved chocolate and the vanilla. Pour into a buttered mould and steam for 1 hour. Serve with custard sauce.

## SWISS CREAM (B.)

4 sponge cakes, jam, 1 egg,  $\frac{1}{2}$  pt. milk,  $\frac{1}{2}$  oz. castor sugar, vanilla, cherries, 1 dessertsp. lemon juice, 1 tablesp. water.

Make a custard with the egg, milk, sugar and vanilla. Split the sponge cakes and spread with jam. Arrange them in a bowl, sprinkle with the lemon and water, pour the custard over them and decorate with cherries.

## APPLE FRITTERS (B.)

2 oz. flour, salt, 1 dessertsp. salad oil,  $\frac{1}{2}$  gill tepid water, 1 egg-white, 3 apples.

Sieve the flour and salt and make a well in the centre, add the oil and tepid water, mix to a smooth paste and beat for a few minutes. Set this aside for 30 minutes. Peel and core the apples and cut them in slices about  $\frac{1}{2}$  inch thick. Whisk the egg-white stiffly and fold it into the batter. Dip the fruit into the batter and fry in deep fat to a golden brown. Drain well and sprinkle with castor sugar.

## VELVET CREAM (B.)

1 oz. ground rice, 1 pt. milk,  $\frac{1}{2}$  oz. butter,  $\frac{1}{2}$  oz. sugar, jam, chopped nuts.

Mix the ground rice to a paste with a little milk. Boil the rest of the milk with a little lemon rind and pour it over the ground rice, stirring well. Return to the saucepan, add the sugar and butter and cook gently. While it is still thin, cool it and pour it over some jam in a glass dish. Sprinkle with chopped nuts or angelica. Serve hot or cold.

## INVALID FRUIT TART (B.)

1 sponge cake, 1 egg, 1 teasp. castor sugar, 1 gill milk, 1 large apple, 2 tablesp. water, 1 dessertsp. sugar.

Stew the apple with the water and the dessertsp. sugar. Cut the sponge cake in thin slices and lay them over the apple in a small pie-dish. Make a custard of the egg, milk and teasp. sugar and pour this over the sponge cake. Bake in a moderate oven for 20-25 minutes till the custard is set.

## OMELET SOUFFLÉ (B.)

2 yolks and 3 whites of egg, 1 dessertsp. castor sugar, vanilla, 1 teasp. flour, 1 tablesp. hot jam.

Prove an omelet pan and brush with clarified butter. Cream the yolks and sugar till thick. Add the flour and vanilla. Fold in the stiffly whipped whites. Heat the omelet pan, pour in the mixture and bake in a moderate oven for about 15 minutes till set and lightly browned. Turn out on sugared paper, place the jam in the centre, fold in two and serve on a d'oyley.

## CHAPTER VI

### CHILDHOOD, ADOLESCENCE, OLD AGE, MOTHERHOOD

#### (a) CHILDHOOD

THE recipes here are chosen to illustrate a simple but abundant diet with natural flavours emphasised and condiments restricted. There should be a liberal use of animal protein and animal fat, with sugars and starches in moderation. Mineral salts, especially those of calcium, iron and phosphorus, should have an important place ; roughage should have due attention and Vitamins A, B, C and D should all be well represented.

#### (b) ADOLESCENCE

Most of the points noted in the diet for childhood are equally important here, but the dishes should show a little more variety and may be a little more elaborate. The main points are to give a specially abundant supply—necessary for extremely rapid growth and development and for great activity—and to emphasise still the use of animal protein and animal fat. It is hardly necessary to give actual recipes, as they can be readily selected from those for Childhood, Motherhood and the Normal Household.

#### (c) OLD AGE

This should also be a simple diet, easily masticated and digested. The powers are waning, the body-cells

less active ; protein becomes less necessary, and the total amount of food should be gradually lowered, as the danger of overfeeding is a real one. Full allowance should be made for differences of appetite and for personal tastes, and there may be a need for humouring and perhaps even for practising a little innocent deception.

#### (d) MOTHERHOOD

This should be a liberal diet, light and easily digested, the total amount being well in excess of the average. As in childhood and adolescence, animal protein and fat, mineral salts and vitamins are of great importance.

#### (a) *Childhood*

Soups<sup>1</sup> : Brown Vegetable, White Vegetable, Potato, Lentil, Tomato, Celery, Rice and Vegetable, Potato and Leek, Oatmeal, Barley Cream, Egg Broth, Fish.

Meat Gravies.

Fish : Steamed or Baked Sole, Hake, Haddock, Cod, Whiting.

Fish Cream, Fish Custard, Fish Stewed in Milk, Fish in Batter.

Meat, etc. : Mutton and Beef Stews with Vegetables, especially the gravy.

Underdone Roast Meats in moderate amount. White Stew of Rabbit, Boiled Rabbit with Parsley Sauce, Savoury Meat Roll.

Steamed, Boiled, Roast Chicken.

<sup>1</sup> For actual recipes, see Part II, chapters I-V and VII.

Stewed Tripe.

Bacon, Ham.

Eggs, lightly cooked (steamed, boiled, poached, scrambled, baked).

Vegetables : Green Vegetables especially, cooked simply and quickly.

Potato Cream, Vegetable Stew, Macaroni Stew, Baked Spanish Onions, Stewed Celery.

Puddings, etc. : Milk Puddings, with or without egg.

Light Steamed Puddings, e.g. Bird's Nest, Apple, Marmalade, Rice and Raisin, Treacle Layer, Treacle, Fig, Date, Golden, Egg, Chocolate, Banana, etc.

Custards, Batters, Blancmanges, Jellies.

Dick's Pudding.

Stewed Fruits, Baked Apples, Apple Charlotte, Apple Snowballs, Fruit in Batter, Buttered Apples, Gooseberry Fool, Apple and Sago, French Cherry Pudding.

Fresh Fruits, Salads of Vegetables or Fruits.

### *(c) Old Age*

Soups : Celery, Potato, Oatmeal, Quaker, Invalid, Barley Cream, Rice Cream.

Fish : Fish Cream, Fish Custard, Fish Stewed in Milk, Steamed Sole, Stewed Whiting, Poached Fish, Steamed Fish Pudding, Stewed Fish, Creamed Sole with Custard Sauce, Fish Soufflé, Light Fish Pudding.

Meat, etc. : White Stew of Rabbit, Minced Veal, Veal Stew, Steamed Veal, Chicken Mould, Chicken

Soufflé, Minced Chicken, Chicken Cream, Stewed Sweetbread.

Feathered Egg, Steamed Egg, Scrambled Egg and many other Egg dishes.

Vegetables, etc.: Many kinds, simply cooked, e.g. Cabbage, Spinach, Cauliflower, Celery, Sea-kale, Onions, Kidney Beans, Young Peas.

Prince's Potatoes, Savoury Potatoes, Macaroni Stew, Semolina Fillets, Semolina Slab.

Puddings, etc.: Milk Puddings of many kinds.

Bird's Nest, Sago Mould, Fruit in Batter, Queen of Puddings.

Many kinds of Jelly, e.g. Apple and Sago, Prune and Orange, Egg, Orange, Milk.

Banana Mould, Egg Pudding, Treacle Pudding, Rice Soufflé, Junket of various kinds.

Stewed Fruits in general. Salads of Fresh Fruit.

Apple Snow, Caramel Pudding (and other custards), French Cherry Pudding, Swiss Cream (and other sponge puddings), Invalid Fruit Tart.

#### *(d) Motherhood*

Soups: All those mentioned in the Household Section are suitable and, in addition, Spinach, Brown Vegetable, Celery, Rice and Vegetable, Potato and Leek, Oatmeal, Quaker.

Fish: Stewed Whiting, Fish Custard, Baked Haddock, Baked Stuffed Haddock, Baked Stuffed Plaice, Fish Stewed in Milk, Soused Herring, Fish Cutlets, Fish Omelet, Cream of Whiting, Savoury Fish, Fricassée of Fish, Fish, Salad.



Meat, etc. : Bacon, Ham, Breakfast Roll, Boiled or Stewed Meats with Vegetables, Roast Meats (underdone), Stewed Liver, Hot-pot (various kinds), Rabbit (boiled or stewed), Meat in Batter, Bullock's Heart, Beef and Kidney Stew, Savoury Meat Roll, Cutlets in Casserole, Lamb Cutlets, Chicken in Casserole (or roast, steamed or boiled), Veal Stew, Fricassée of Chicken or Veal, Egg Salad and other Egg dishes. Cheese dishes in many varieties.

Vegetables, etc. : Green Leafy Vegetables and many others, simply boiled. Vegetable dishes selected from the Household and Vegetarian Sections. Fresh Salads.

Puddings, etc. : Milk Puddings of many kinds. Steamed Puddings, e.g. Apple, Marmalade, Treacle Layer, Treacle, Fig or Date, Golden, Chocolate.

Custards, Jellies, Blancmanges.

Stewed Fruits, Fresh Fruits.

Fruit Puddings, e.g. Fruit in Batter, Baked Apple Pudding, Buttered Apples, Lemon Pudding, Apple Fritters.

## CHAPTER VII

### VEGETARIAN DISHES

#### ALMOND SOUP (M.)

3 oz. almonds, 1 or 2 bitter almonds, 1 pt. vegetable stock, a stick of celery, 1 small onion, seasoning, 1 egg, 2 tablesp. cream.

Blanch and chop the almonds. Put them into a lined pan with stock, celery and onion. Simmer for 1 hour, take out the onion and rub the soup through a sieve. Add the beaten egg, the cream and seasoning and cook gently, without boiling, until the soup thickens.

#### CUCUMBER SOUP (D.T.)

1 cucumber, 1 small onion,  $\frac{1}{2}$  teasp. celery seed,  $1\frac{1}{2}$  oz. butter, 1 pt. stock, seasoning, ground mace, 1 egg, cream.

Peel and slice the cucumber, cut up the onion and fry these in the butter over gentle heat for 10 minutes. Add the stock and seasonings and simmer very gently for 20-30 minutes. Rub through a sieve, return to the clean pan and stir in a well-beaten egg and 2 or 3 tablesp. of cream. Do not boil.

#### CHESTNUT SOUP (B.)

1 lb. chestnuts,  $1\frac{1}{2}$  pts. vegetable stock or water, 1 oz. flour, small piece of celery,  $\frac{1}{2}$  pt. milk, 1 onion, 1 oz. butter, seasoning, nutmeg.

Cut the end of each chestnut and bake or boil for

20 minutes. Remove the outer and inner skins. Put nuts, onion and celery into a pan with the butter and stock. Simmer till tender, about 1-1½ hours. Rub through a sieve, season, add nutmeg and thicken with the flour and milk.

### BROWN VEGETABLE SOUP (B.)

1½ gills mixed vegetables (e.g. carrot, turnip, onion, celery), mixed herbs, seasoning, 1 oz. fat, 1 oz. flour, 1 pt. stock.

Cut the vegetables into small pieces and fry them in the fat until they begin to shrivel. Take them from the pan and fry the flour slowly until well browned. Add this to the vegetables, pour over them the stock. Add seasoning and a pinch of herbs in muslin. Simmer for 1 hour, rub through a sieve, reheat and serve with fried dice of bread.

### CELERY SOUP (M.)

1 head of celery, ½ oz. butter, ¾ oz. flour, 1 quart. white stock, 1 pt. milk, seasoning.

Cut the celery and cook it in butter for 5 minutes. Add the stock and cook until the celery is tender. Rub through a sieve. Mix the flour to a smooth paste with a little cold milk, add it and the remainder of the milk and the seasoning to the stock and boil gently for 5 minutes, stirring all the time.

### SAVOURY OMELET (B.)

3 eggs, ¾ oz. fresh butter, chopped parsley, seasoning, 1 tablesp. cream or milk.

Prove an omelet pan and put in the butter to heat. Beat the eggs and add a little chopped parsley, season-

ing and the cream or milk. Pour the mixture into the hot butter and stir till it begins to set creamily all over. Smooth the top and loosen the edges with a knife. While the omelet is still creamy, roll it up quickly and serve.

#### BAKED EGGS

Butter a small pie-dish and put into it 2 or 3 raw eggs with yolks unbroken. Season carefully and bake very gently for 10-15 minutes until the eggs are lightly set. A nicely flavoured bread sauce with a little grated cheese makes a good addition.

#### CHEESE PUDDING (B.)

2 oz. fresh breadcrumbs,  $\frac{1}{2}$  pt. milk,  $1\frac{1}{2}$  oz. grated cheese, 1 oz. butter, 1 egg, seasoning.

Heat the milk in a white-lined saucepan. Add the butter, crumbs and seasoning, then the egg-yolk and cheese. Fold in the stiffly whipped egg-white. Pour into a buttered pie-dish and bake in a fairly hot oven for about 20 minutes.

#### MACARONI CHEESE (B.)

3 oz. macaroni, 3 oz. grated Cheddar cheese,  $\frac{1}{2}$  oz. butter,  $\frac{1}{2}$  oz. flour,  $\frac{1}{2}$  pt. milk,  $\frac{1}{2}$  teasp. made mustard, seasoning, sippets of fried bread or toast.

Break the macaroni and cook in boiling salted water for 30-40 minutes, then drain it. Make a white sauce with the butter, flour and milk. Add to it the macaroni, the seasonings and  $\frac{2}{3}$  of the cheese. Pour the mixture into a greased pie-dish, sprinkle over it the rest of the cheese and brown it in a hot oven. Decorate the edge with the bread or toast and garnish with parsley.

## SEMOLINA FILLETS (B.)

2 oz. semolina,  $\frac{1}{2}$  pt. milk, 1 oz. butter, 1 teasp. grated onion, 3 teasp. mashed potato, seasoning, 1 egg, lemon and parsley.

Put the onion, butter and milk into a small saucepan, bring to boiling-point, sprinkle in the semolina and cook for about 15 minutes. Add the potato and seasoning and enough egg to bind the mixture. Cool on a plate and divide into fillet-shaped pieces. Coat with egg and white crumbs, fry in deep fat, garnish with lemon and parsley and serve Dutch sauce separately.

## EGG CUTLETS (B.)

2 hard-boiled eggs, 1 oz. butter, 1 oz. flour, 1 gill milk, 1 teasp. curry powder, seasoning, lemon juice,  $\frac{1}{2}$  oz. breadcrumbs.

Heat the butter and slightly fry the curry powder and flour. Add the milk and beat over the fire till the mixture is ready to leave the sides of the pan. Add to this panada the chopped eggs, crumbs, seasoning and lemon juice. Form into cutlets, coat with egg and crumbs, fry in deep fat and garnish with parsley.

## SEMOLINA SLABS (S.)

3 oz. semolina, 3 oz. grated cheese, 1 pt. milk, 1 egg, breadcrumbs, seasoning.

Boil the milk, sprinkle in the semolina and cook till quite thick and transparent, then add the cheese and seasoning. Spread on a wet plate, cool and divide into portions. Form into square blocks, coat with egg and crumbs and fry in deep fat. Serve sprinkled with cheese.

## CHEESE SAVOURY (S.)

Chop a large onion and fry it in about 1 oz. of fat. Add 6 oz. red lentils that have previously been soaked in  $\frac{1}{2}$  pt. boiling water ; cook gently until tender, then stir in about 6 oz. grated cheese and 3 oz. breadcrumbs. Add seasoning, and, if liked, a little H.P. sauce. Moisten, if necessary, with a little gravy or stock, put all into a greased pie-dish with knobs of butter on top and bake until firmly set.

## LENTIL SOUFFLÉ (B.)

1 gill lentils, 2 eggs,  $\frac{1}{2}$  gill cream,  $\frac{1}{2}$  oz. butter, seasoning.

Soak the lentils and stew them in a small quantity of water until a thick purée is formed. Rub through a sieve. Add the butter, seasoning, egg-yolks and cream. Fold in the stiffly whipped whites. Put into a greased soufflé dish and bake in a moderate oven for 20 minutes till well risen and set.

## LENTIL ROAST (R.)

$\frac{1}{2}$  lb. lentils, 1 oz. fat,  $\frac{1}{4}$  lb. rice, 1 small onion, pinch of herbs, seasoning, breadcrumbs.

Wash the lentils and soak them overnight. Put them in a pan with the chopped onion, the herbs and a small quantity of water and cook until almost tender. Add the washed rice and continue cooking till it has absorbed the liquid. Season well and, if necessary, stiffen with a few breadcrumbs. Turn on to a moistened board, form into a roll or brick and place on a baking-tin. Put the fat over the top and bake in a moderate oven for about  $\frac{1}{2}$  hour, basting frequently.

## RISOTTO (R.)

$\frac{1}{2}$  pt. tinned tomatoes,  $1\frac{1}{2}$  oz. butter, seasoning, grated nutmeg, 1 oz. grated cheese, 2 onions,  $\frac{1}{4}$  lb. rice.

Soak the rice for 24 hours, then cook it for 7 minutes in boiling salted water, and drain. Fry the onions a golden brown in the butter. Add the rice and fry slightly, then add the seasonings and tomatoes. Simmer gently for 20–30 minutes till tender, shaking the pan occasionally. Just before dishing, add the grated cheese and mix lightly.

## SAVOURY RICE (D.T.)

2 oz. rice,  $\frac{1}{4}$  pt. stock, 1 oz. butter, juice of 1 onion, 3 eggs, 3 tablesp. tomato purée or sauce.

Wash the rice and cook it in the stock. Simmer well, then drain and let it cool. Stir in the tomato, onion juice and butter, add 2 egg-yolks, one at a time, then a whole egg and the 2 stiffly whipped whites. Bake in a buttered soufflé or pie-dish for 20–30 minutes in a moderate oven.

## BAKED SPANISH ONIONS (M.)

2 Spanish onions,  $\frac{1}{2}$  oz. butter,  $\frac{1}{2}$  oz. flour,  $\frac{1}{4}$  pt. white stock or milk, seasoning.

Boil the onions for  $\frac{1}{2}$  hr. Strain them and put into a pie-dish. Melt the butter in a saucepan, stir in the flour, add the stock slowly and bring to boiling-point, stirring all the time. Add the seasoning. Pour the sauce over the onions and bake in a moderate oven for 1 hour. If liked, a little grated cheese may be sprinkled over the onions 10 minutes before serving.

## PRINCE'S POTATOES (D.T.)

1 lb. boiled potatoes, 1½ oz. grated cheese, 1 oz. butter, 1 egg-yolk, chopped parsley, seasoning, bread-crumbs.

Sieve the potatoes, melt the butter and add it, with seasoning, parsley and cheese, to the potatoes. Add the egg-yolk and beat well. Form into balls or rolls, place on a floured baking-tin, scatter fresh bread-crumbs over them and brown lightly in a good oven.

## POTATO STEW (D.T.)

6 large potatoes, 1 large onion, 1 oz. dripping, 1 gill water, ½ pt. milk, herbs, seasoning, 1 carrot, 1 dessertsp. flour.

Quarter the potatoes, slice the onion and grate the carrot. Melt the dripping in a stewpan, dry the potatoes and fry them and the onion without browning. Add half the milk, then the water, carrot and seasoning, and the herbs tied in muslin. Mix well, cover and stew gently for about ¾ hour. Lift out the potatoes and place them on a hot dish. Mix the flour smooth with the remaining milk, and after removing the herbs thicken the liquor with it. Stir until boiling, simmer for a few minutes, pour over the potatoes and serve very hot.

## HOLLANDAISE POTATOES (D.T.)

1½ lb. new potatoes, 1½ oz. butter, 1 egg-yolk, seasoning, lemon juice, parsley, 2 large tablesp. white sauce.

Cook the potatoes in boiling salted water with a little mint. Drain and dry them. Lay in a hot vegetable dish and cover with a sauce made as follows : Melt the butter in a small pan, add the white sauce



and stir over the fire until hot. Add a little lemon juice and season well. Beat the egg-yolk and pour the sauce over it, stirring well. Reheat but do not boil. Garnish with some finely chopped parsley.

#### VEGETABLE CASSEROLE (D.T.)

2 lb. mixed vegetables (e.g. carrots, turnips, celery, onions, potatoes, parsnips and leeks), 1 oz. flour,  $\frac{3}{4}$  oz. butter, mixed herbs, seasoning, dumplings.

Cut the vegetables in dice and put them in a casserole with about 1 quart water and bring to the boil. Add a good pinch of herbs, tied in muslin, and some dumplings. Cover and put into a moderate oven and simmer for about 1 hour, or until the vegetables are soft. Strain off the liquid, return it to the casserole and thicken with 1 oz. flour blended with  $\frac{3}{4}$  oz. butter. Stir until boiling. Return vegetables and dumplings, make very hot and serve in the casserole.

#### GREEN PEA CREAM (D.T.)

1 teacupful shelled peas, 1 small lettuce, a little cream, cooked rice, salt, sugar.

Put the peas and the lettuce in fast boiling salted water with a sprig of mint. Boil them gently for 20 minutes, then strain and rub through a sieve. Add the cream to the purée and reheat. Add a pinch of sugar and more salt if necessary. Serve as for curry with a surround of boiled rice.

#### GREEN PEAS STEWED (D.T.)

2 lb. green peas, 1 lettuce, 1 onion, 1 egg, 2 oz. butter, seasoning, mint, sugar.

Coarsely chop the lettuce, slice the onion thinly and

put these into a pan with the butter and a sprig of mint. When the butter has quite melted, add the peas and about 1 teasp. white sugar. Cover the pan and stew very gently for about 1 hour, or until the peas are tender. Add the well-beaten egg and stir over gentle heat without boiling. Season delicately and serve with brown bread and butter.

### GREEN PEA AND TOMATO SALAD (D.T.)

For each person allow 1 large firm tomato, 1 dessertsp. each of cooked peas and mayonnaise, a few young lettuce leaves, seasoning.

Cut a slice from the top of each tomato and scoop out the centre, leaving a firm case. Put the slices and the centres into a small pan, add seasoning and cook gently until soft. Rub through a sieve and when quite cold mix with the mayonnaise and peas. Fill the tomato cases with the mixture and serve on lettuce leaves.

### STEWED CELERY (B.)

1 head celery, 1 piece of toast, flour, butter, milk and water.

Cut the celery into suitable lengths, cover it with boiling milk and water and stew for about 1 hour, until tender. Drain well and serve on toast. Make a coating sauce with the butter, flour, milk and water and pour it over the celery.

### STEWED TURNIPS (Ec.)

1 lb. turnips,  $\frac{1}{2}$  pt. gravy or stock, seasoning.

Boil the turnips for 15 minutes, then drain and slice

them. Add gravy and seasoning, bring to boiling-point and stew till tender.

[Carrots and celery may be done in the same way.]

### CAULIFLOWER AU GRATIN (B.)

1 cauliflower,  $\frac{1}{2}$  pt. thick coating sauce, 1 oz. grated cheese, seasoning, browned crumbs.

Cook the cauliflower and place it in a fireproof dish. Add the cheese to the sauce and stir it over the fire until smooth, then coat the cauliflower with it. Sprinkle with grated cheese and the crumbs and brown lightly under the griller or in a hot oven.

### BARLEY PUDDING (A.T.D.S.)

2 oz. barley, 1 pt. milk, salt, sugar to taste.

Wash the barley and put it into a greased pie-dish with the milk, salt and sugar. Cook in a slow oven for 3 hours.

### OMELET SOUFFLÉ (B.)

2 yolks and 3 whites of egg, 1 dessertsp. castor sugar, vanilla, 1 teasp. flour, 1 tablesp. hot jam.

Prove an omelet pan and brush it with clarified butter. Cream the yolks and sugar till thick. Add the flour and vanilla, then fold in the stiffly whisked whites. Heat the omelet pan, pour in the mixture and bake in a moderate oven for about 15 minutes till set and lightly browned. Turn out on sugared paper, put the jam in the centre, fold the omelet and serve on a d'oyley.

### GOOSEBERRY FOOL (B.)

1 lb. green gooseberries, 3 oz. sugar, 1 gill water, strip of lemon rind, 1 gill milk, 1 egg.

Stew the gooseberries with the sugar, water and lemon and rub them through a sieve. Make a custard with the egg and milk and add it to the sieved gooseberries, mixing well.

[Apples, rhubarb, raspberries, etc., may take the place of gooseberries, and thick cream may be used instead of custard.]

#### APPLE AND SAGO JELLY (R.)

2 oz. sago,  $\frac{1}{2}$  lb. apples, 2 tablesp. sugar,  $\frac{1}{2}$  pt. water,  $\frac{1}{2}$  lemon.

Wash the sago and let it steep in the water, then put it into a pan and stir over gentle heat until the sago is clear. Stew the apples in the lemon juice and a very little water till reduced to a pulp. Add this and the sugar and grated rind to the sago and mix well. Turn into a wet mould to set.

#### FRUIT SALAD (D.T.)

$\frac{1}{2}$  lb. loaf sugar, 1 gill water, juice of 1 lemon, a mixture of fruits in season.

Make a syrup by boiling quickly for 5 minutes the sugar, water and lemon juice. Prepare the fruits, pour the hot syrup over them, cover and leave until cold.

#### CHESTNUTS AND APPLES (D.T.)

Peel and core 4 large cooking apples and fill the centres with a thick mixture of boiled sieved chestnuts, butter and sugar. Bake in a good oven and, 10 minutes before serving, put a pile of the mixture on top of each apple. This will make a delicious sauce when the apples are returned to the oven.

## CHESTNUT CARAMEL (D.T.)

$\frac{1}{2}$  lb. peeled chestnuts,  $\frac{1}{2}$  pt. milk, 2 oz. sugar, vanilla,  
6 oz. sugar, juice of  $\frac{1}{2}$  lemon.

Stew the chestnuts gently in the milk until they are tender and the milk is absorbed. Add 2 oz. sugar, rub through a sieve, and flavour with vanilla. The purée should be quite thick. Arrange in a pyramid with smooth sides and leave until cold. Make a rich brown caramel with 6 oz. sugar and the lemon juice and quickly pour it over the pyramid so that it forms a hard coating all the way down. Some rich custard sauce might be poured round the base.

## CHAPTER VIII

### INVALID BEVERAGES

#### ACID

##### REFRIGERENT DRINK

1 tablesp. Horlick's malted milk,  $\frac{1}{2}$  gill boiling water,  
1 tablesp. red currant jelly,  $1\frac{1}{2}$  gills cold water, a  
little cracked ice.

Mix the malted milk with a little of the boiling water, add the rest of the boiling water and the jelly; stir over a basin of hot water till the jelly melts, then add the cold water and the ice and serve daintily.

##### TEA PUNCH

Make boiling lemonade and sweeten to taste. Pour it over the tea and allow to stand till cold. Strain and serve with ice and a slice of lemon.

##### CREAM OF TARTAR WHEY

Mix a large teaspoonful of cream of tartar in 2 tablespoonfuls of hot water. Add this to 1 pt. of boiling milk. Flavour with lemon and a little sugar and strain when cold.

##### CREAM OF TARTAR DRINK

Dissolve 1 teasp. of cream of tartar in 1 pt. of boiling water, flavour with lemon and sugar, and strain when cold.

## LEMON WHEY

Heat  $\frac{1}{2}$  pt. of milk in a double saucepan, add 2 tablesp. of lemon juice and 2 teasp. of sugar and strain off the whey through double muslin.

## APPLE WATER (B.)

3 apples,  $\frac{1}{2}$  oz. sugar, strip of lemon rind, 1 pt. boiling water.

Wipe the apples and cut them in slices without peeling or coring. Put them in a jug with the sugar and lemon rind. Pour the boiling water over them, cover and allow to stand till cold, then strain off the liquor.

## BLACK CURRANT TEA

Add a pinch of ground ginger to two heaped tablesp. of home-made black currant jam. Pour in  $\frac{1}{2}$  pt. of boiling water, allow to stand for 5 minutes, then strain and use hot.

## RHUBARB PUNCH (M.)

Take 2 lb. of rhubarb, wash and cut it but do not peel. Pour over it sufficient boiling water to cover, and leave till cold. Make a syrup by boiling together  $\frac{1}{2}$  lb. sugar,  $\frac{1}{2}$  pt. water, 6 cloves, 1 inch cinnamon stick, the rind and juice of 2 lemons. Boil 20 minutes and strain, then add the rhubarb water, also strained.

## LEMON COBBLER (M.)

Wash a lemon and peel off the rind thinly. Put the rind into a saucepan with 1 teacupful of water and 1 tablesp. of sugar. Boil for 15 minutes, strain and cool. Beat up an egg, add the lemon juice, strain it and mix with the syrup. Serve with soda water.

## LEMONADE AND ORANGEADE

Squeeze the juice of  $\frac{1}{2}$  lemon (or orange), add sugar to taste, dissolve in  $\frac{1}{2}$  pt. water, mix well and serve hot or cold.

## MEAT JUICES, ETC.

## BEEF-TEA (E.)

Half a pound of fat-free meat is cut into small cubes and put into a jar or flask with wide opening. Cover and place the jar in warm water, bring to boiling-point and boil for about  $\frac{1}{2}$  hour, then pour off the juice, which is ready for use.

## BEEF-TEA (another recipe)

Take all skin, fat and gristle from  $\frac{1}{2}$  lb. lean beef and scrape or shred the meat finely, putting it into a jar with  $\frac{1}{2}$  pt. cold water. Add a little salt if allowed. Let it stand for 30 minutes, and from time to time press out the meat against the jar. Cover the jar with greased paper and let it stand for 2 hours in a saucepan of boiling water.

## BEEF JUICE (E.)

Chop up finely some lean beef or scrape it with a fork or meat-scraper, to separate the connective tissue. Put it into a jar with a pinch of salt and enough cold water to cover it. Allow it to stand from 1 to 6 hours, then squeeze well through coarse muslin. It may be given alone, or mixed with other foods, warm or cold but not hot. It should be warmed in a double saucepan.



## MILK

## MILK PUNCH (E.)

$\frac{2}{3}$  of a glassful milk, 1-2 teasp. sugar, 1 raw egg, 1 tablesp. sherry (or  $\frac{1}{2}$  tablesp. brandy), nutmeg.

Separate the egg and beat the yolk with the sugar until very light. Add the white, beaten stiff, then the sherry and milk. Shake well and add the nutmeg. Serve hot or lukewarm.

## MILK COFFEE

Boil  $\frac{1}{2}$  pt. of milk (or milk and water), pour it over 1 dessertsp. of coffee in a warmed jug. Fine the coffee by pouring it backwards and forwards into a heated cup. Leave for 5 minutes, strain and use.

[Or the dry coffee can be sprinkled into the boiling liquid. Stir and boil for a few minutes.]

## MILK TEA

Warm a teapot, put into it 1 good teasp. of tea and pour over it  $\frac{1}{2}$  pt. boiling milk. Leave for 5 minutes and pour off.

## ALMOND MILK (E.)

1 oz. sweet almonds and 2 bitter almonds are left in cold water overnight, then peeled and pounded thoroughly in a mortar and mixed with  $\frac{1}{2}$  pt. of warm milk or water. The mixture is left standing for 2 hours, strained and pressed out well through muslin.

## MILK TOAST (E.)

Toast several slices of bread to a delicate brown; season scalding hot milk with a little salt and pour it over the toasted bread.

## STARCH

## DECOCTIONS OF CEREALS (E.)

A heaped tablespoonful of washed pearl barley (or patent barley), rice, arrowroot, or oatmeal is put into a saucepan and a quart of boiling water and a pinch of salt are added. Stir and boil until it has evaporated to about  $\frac{2}{3}$  of a quart, then strain through muslin. It can be flavoured with lemon rind while boiling.

## CLEAR BARLEY WATER (B.)

2 oz. pearl barley, 1 thin strip lemon rind, 1 pt. boiling water, 3 lumps sugar.

Blanch the barley and put it with the lemon rind and sugar into a jug. Pour the boiling water over it, cover closely and strain when cold.

## TOAST WATER (B.)

Toast a slice of bread till dry and brown, put it into a jug and pour 1 pt. of boiling water over it. Strain off the liquid when cold.

## CRUST COFFEE

Dry some crusts in a slow oven and, after crushing them, pour boiling water over them. Set aside for 10 minutes, then strain carefully.

## EGG

## EGG ALBUMIN WATER (E.)

The white of 1 raw egg is well beaten with about 7 tablesp. of cool water, strained through muslin and seasoned either with a trace of common table salt or some sugar.

## ALBUMINISED MILK

To the white of 1 egg, add  $\frac{1}{4}$  oz. lime water, or a little lemon juice, and 1 gill milk. Shake in a covered jar till blended, then strain and use.

[Broth may be used instead of milk.]

## EGG NOG

Beat the yolk of 1 egg, adding sugar to taste and 1 gill milk. Whisk the egg-white and fold it in lightly. Add  $\frac{1}{2}$  teasp. vanilla or a little lemon juice. Shake and serve.

[Broth or coffee or malted milk can be prepared with an egg in the same way.]

## ORANGE FLIP (M.)

1 orange,  $\frac{1}{2}$  lemon, 1 tablesp. sugar, 1 egg.

Put the egg-yolk, half the sugar, the lemon and orange juice into a basin and beat well. Strain into a tumbler. Whisk the egg-white with the remainder of the sugar to a stiff froth and gently fold into the first mixture. Serve at once.

# INDEX

## A

Accessory food factors, 39  
 Acid :  
     beverages, 223-225  
     effect on micro-organisms, 71-73  
     effect on protein, 90, 91  
     in fruits, 94  
 Acids, organic, 16, 39, 173  
 Adolescence, 42, 54, 61, 63, 206  
 Albumin, 20, 89, 227  
 Albuminous beverages, 157, 227, 228  
 Alcohol, 73, 90, 91, 116  
 Almond Milk, 226  
     Soup, 211  
 Amino-acids, 18, 21, 22, 47  
 Anæmia, 34, 96  
 Apple, 77, 103, 105  
     and Sago Jelly, 221  
     Charlotte, 150, 201  
     Fritters, 204  
     Pudding, 149  
     Pudding, Baked, 152  
     Snow, 171  
     Snowballs, 151  
     Water, 224  
 Apples :  
     and Chestnuts, 221  
     Buttered, 153  
 Arrowroot, 30, 120, 157  
     Cup of, 167  
     Pudding, 171  
 Artichoke, 28, 78, 103, 175

## B

Bacon, 82, 104  
     boiled, 101  
     choice, 85  
     fried, 106  
     in soup, 112  
 Bacteria, 47, 70-74, 76, 77, 116  
 Bakewell Pudding, 203  
 Baking, 98, 104-106  
 Banana :  
     Mould, 178  
     Orange and Banana Salad, 177  
     Pudding, 167  
 Banting, 183  
 Barley, 29, 42, 75  
     Cream Soup, 160, 190  
     Pudding, 119, 220  
     Water, 157, 227  
 Batter, 94, 105, 107, 115  
 Beans, 30, 42, 75  
     Savoury Butter, 199  
 Beef :  
     and Kidney Stew, 140  
     choice, 84  
     cooking, 101, 103, 104, 105  
     Juice, 225  
     Olives, 137  
     Salt Beef, 101  
     Shin of Beef Soup, 128  
     steak, 91, 92  
     Stew, 138  
     Tea, 96, 225  
     Tea Jelly, 167  
 Beetroot, 78

Beri-beri, 41  
 Beverages, 96, 223-228  
 Bile, 46  
 Biological value, 21  
 Bird's Nest Pudding, 149  
 Biscuits, 75, 84  
 Blackberry, 77, 87  
 Black Currant Tea, 224  
 Boiling, 98, 100-102  
 Braising, 109  
 Bread :  
   and Cheese Pudding, 147  
   brown, 83  
   Date, 180  
   diabetic, 184  
   Jelly, 170  
   making, 72, 73, 84, 116, 117  
   storage, 75  
   white, 34, 35, 83  
   wholemeal, 39, 83  
   Wholemeal Fruit, 179  
 Breakfast Roll, 198  
 Broth :  
   Egg, 159  
   Meat, 158  
   Mutton, 158  
   Scotch, 128  
 Brussels sprouts, 87  
 Budgets, 60, 61, 63-69  
 Bullock's Heart, Stewed, 139  
 Butter :  
   choice, 86  
   cooler, 76  
   digestion, 47, 93  
   flavour, 72  
   for vitamins, 41, 43  
   in toffee, 95  
   melting-point, 93

## C

Cabbage, 42, 87

Cake :  
   baking, 105  
   Chocolate, 153  
   choice, 84  
   Gingerbread Nuts, 180  
   Madeira, 154  
   making, 118, 119  
   Parkin, 181  
   Scotch Seed, 155  
   storage, 72, 75  
   Vinegar, 154  
   Wholemeal Gingerbread, 179  
 Cakes :  
   Oatcakes, 181  
   Oatmeal Biscuits, 181  
   Potato, 155  
   Quaker Oat Biscuits, 180  
   Rice, 154  
 Calcium, 28, 33, 35, 37, 43  
   Calf's Brain Soup, 159  
 Calories, 26, 51, 53-62, 82, 183  
 Caramel, 95  
   Pudding, 201  
 Carbohydrate, 26-32  
   absorption, 47  
   digestion, 46  
   effect of heat, etc., 94, 95  
   in fevers, 156  
   in obesity, 184  
   protein sparer, 48  
   yielding energy, 51, 55  
 Carrot, 33, 41, 42, 78  
   Soup, 130  
 Casein, 19, 41  
 Casserole, 102, 109  
   Beef in, 136  
   Chicken in, 143  
   Cutlets in, 142  
   Ox-tail in, 136  
   of Rabbit, 136  
   Vegetable, 218

Cauliflower, 33, 87  
 au Gratin, 99, 220  
 Celery, 33, 103  
 Soup, 175, 212  
 Stewed, 219  
 Cellulose, 27, 28, 39, 47, 94, 174  
 Cereals, 27-29, 75, 82, 119, 120  
 Decoctions of, 227  
 Soups with, 160  
 Cheese, 72, 73  
 and Onions, 148  
 Bread and Cheese Pudding, 147  
 choice, 86, 87  
 for calcium, 33  
 for vitamins, 41, 43  
 Macaroni, 99, 213  
 protein in, 20  
 Pudding, 213  
 Savoury, 199, 215  
 Spaghetti and Tomato, 148  
 storage, 77  
 with Potatoes, 144  
 Cherry Mould, 168  
 French Cherry Pudding, 201  
 Chestnuts and Apples, 221  
 and Caramel, 222  
 Soup, 211  
 Chicken :  
 Cream, 196  
 Croquettes, 197  
 Fricassée, 195  
 in Casserole, 143  
 Minced, 165  
 Mould, 165  
 Soufflé, 195  
 Children's diet, 34, 41, 42, 61,  
 124, 206-208  
 Chlorine, 35  
 Chocolate, 25  
 Cake, 153  
 iodised, 36

Mould, 151  
 Nut Pudding, 202  
 Pudding, 204  
 Rice, 202  
 Cider, 174  
 Climate, 53  
 Coal, 8, 10  
 Cocoa, 83, 184  
 Cod, Baked, 184  
 Cod liver oil, 40, 44, 158  
 Coffee, 83, 157, 174  
 Milk Coffee, 226  
 Colourless plants, 70  
 Connective tissue, 22, 92, 94, 110  
 Constipation, 39, 173-182  
 Convalescence, 156-172  
 Cooling, 70, 72  
 Cornflour, 29, 75, 120, 157  
 Cornish Pasties, 142  
 Crab, Dressed, 133, 134  
 Scrambled, 134  
 Cream :  
 digestion, 47, 93  
 for vitamins, 41, 43  
 in invalid diet, 157  
 in soups, 112  
 storage, 77  
 Cretins, 36  
 Croûtons, 112  
 Crust Coffee, 227  
 Cucumber Soup, 211  
 Cupboards, 5, 6, 74  
 Curried :  
 Beans, 147  
 Fish Fritters, 133  
 Tripe, 139

## D

Dairy products, 16, 76, 77, 86,  
 87

## Date :

Bread, 180

Pudding, 177

Dextrin, 94

Diabetes, 19, 25, 26, 32, 38, 53,  
112

Dick's Pudding, 203

Diet-sheets, 49-62

Digestion, 45-47

in fevers, 156

in old age, 206, 207

Digestive juices, 90, 92

Dried orange juice, 42

Dripping :

digestion, 93

for vitamins, 41

in frying, 107

in roasting, 104

Drying, 43, 70, 71

Dutch oven, 10, 98, 104, 105

## E

## Egg :

Broth, 159

coddled, 109

Cutlets, 214

Feathered, 164

Jelly, 170

Junket, 171

Mousse, 191

Nog, 228

Poached in Milk, 199

Pudding, 200

Salad, 148, 186

Steamed, 186

## Eggs :

Baked, 186, 213

in Spinach Cases, 186

in Tomatoes, 166

Scrambled, 109, 186, 197

Scrambled in Tomatoes, 185

Swiss, 164, 196

with Cheese Sauce, 197

with Mushrooms, 185

Electricity, 9

domestic supply, 8, 13

Extractives, 16, 110, 157

## F

Fat, 23-26, 115

absorption, 48

and calcium, 33

digestion, 46, 47

effect of heat, etc., 93, 94, 107

for vitamins, 40, 43

habit, 24

in cooking, 98, 104, 105, 106-  
108

in fevers, 156, 158

in obesity, 184

protein sparer, 23

yielding energy, 51, 55

Fat-soluble vitamins, 40, 43

Fatty acids, 23, 47

tissues, 24, 27, 47, 183

Fermentation, 70, 73, 116, 117,  
173

Fevers, 35, 38, 156, 157

Fig, 173

Pudding, 177

## Fish :

Baked, 131, 132, 184

choice, 85, 86

cooking, 101, 103, 105

Cream, 130, 163

Custard, 131, 192

Cutlets, 161

effect of heat, etc., 92

Fricassée, 194

Fritters, 133

in Batter, 192

Light Pudding, 194

- Mould, 192
- Omelet, 163
- Poached, 162
- protein of, 19
- Salad, 133, 164, 185
- Soufflé, 192, 193
- Soup, 127, 159
- Steamed Pudding, 162
- Stewed, 130, 131, 132, 161, 162
- storage, 71
- Flies, 7, 73, 77
- Flour :
  - choice, 82
  - in bread, 116, 117
  - in cakes, 118, 119
  - in pastry, 117, 118
  - raising agents, 114, 115
  - storage, 75
- Fluid diet, 156-158
- Food :
  - classification, 15, 16
  - preservation, 41, 43, 70, 75
  - sources, 16
  - tables, 52, 55, 57-59
- Food-stuffs, 14-44, 49-51, 55, 89-95
- Fricassée :
  - Chicken, 195
  - Fish, 194
  - Veal, 195
- Fruit :
  - bottled, 75, 77
  - choice, 87
  - cooking, 102, 103
  - dried, 81, 82, 184
  - drinks, 157
  - fermentation, 73
  - for roughage, 39
  - for vitamins, 40-42, 51
  - in Batter, 152
  - Invalid Fruit Tart, 205
  - Mould, 149
  - mould in, 73
  - Pudding, 200
  - Salad, 187, 221
  - storage, 77
  - tinned, 75, 77
  - Fruiting bodies, 72
  - Frying, 93, 98, 106-108
  - Fungi, 72
- G
- Gas :
  - as fuel, 8, 9
  - economiser, 11
  - griller, 12, 108, 120
  - ring, 10, 11, 59
  - stove, 12, 108
- Gelatin, 22, 110, 112
- Gingerbread :
  - Nuts, 180
  - Wholemeal, 179
- Glucose, 31, 47
- Gluten, 20, 29
- Glycerine, 23, 47
- Glycogen, 47
- Golden :
  - Buck, 196
  - Pudding, 178
- Gooseberries, Stewed, 187
- Gooseberry :
  - Fool, 220
  - Jelly, 186
- Gout, 38
- Grape, 31, 87
  - fruit, 42, 96
- Gravy, 102, 103, 105, 108
- Green plants, 14, 40, 44, 51, 70
- Grilling, 99, 108, 109
- Groats, 75, 167
- Gruel, 157, 167



## H

Haddock, Baked, 131, 132, 184  
 Hæmoglobin, 34  
 Hake, 184, 185  
 Ham, 85, 101  
 Haricot :  
   beans, 128  
   Mutton, 139  
   Mutton Cutlets, 142  
 Health visitor, 59, 63  
 Heart, 41, 42, 139  
 Hearth-stand, 10  
 Herring, 25, 86  
   Soused, 132  
 Honey, 31, 173  
 Hot-pot, 103  
   Beef, 135  
   Pork and Apple, 135  
   Yorkshire, 135

## I

Income, 64, 65, 68, 79  
 Insulin, 26, 32  
 Insurance, 60, 68, 69  
 Intestine, 37, 46, 47, 173  
 Invalid :  
   beverages, 124, 156, 157, 223-228  
   diet, 42, 91, 97, 123, 124  
   Fruit Tart, 205  
   Soup, 160  
 Iodine, 36  
 Iron, 28, 34, 37  
 Isinglass Blancmange, 169

## J

Jam, 72, 75, 81, 101  
 Jellies, 157, 158 (*see under*  
   " puddings ")  
 Junket. Egg, 171

## K

Kidney, 41, 42  
   and Beef Stew, 140  
   Omelet, 194  
   Soup, 129  
 Kidneys, 37, 156, 183  
 Kipper Paste, 191  
 Kitchen, 5-7

## L

Lactalbumin, 19, 41  
 Lamb, 85  
   Creamed, 141  
   Cutlets, 141  
 Lard, 40, 107  
 Larder, 6, 7, 74, 76-78  
 Leek Soup, 175  
 Legumin, 20  
 Lemon, 42, 77, 87  
   Cobbler, 224  
   Cream, 150  
   Pie, 202  
   Whey, 224  
 Lemonade, 157, 225  
 Lentil, 30, 42, 75  
   and Tomato Sausages, 146  
   Rissoles, 147  
   Roast, 215  
   Soufflé, 215  
   Soup, 128  
 Lettuce, 87  
 Liver, 41, 42, 46, 47, 85  
   Stewed, 134

## M

Macaroni, 28  
   Cheese, 99, 213  
   à la Crème, 199  
   Stew, 148

- Mackerel, 25, 86  
     Soused, 132  
     Stewed, 131  
 Madeira Cake, 154  
 Magnesium, 35  
 Maize, 29  
 Malt, 31  
 Malted foods, 158  
 Margarine, 25, 86, 107  
 Marketing, 79-88  
 Marmalade, 173  
     Pudding, 151  
 Marmite, 42  
 Mastication, 97, 156  
 Meat :  
     braising, 109  
     Broth, 158  
     choice, 84, 85  
     cooking, 101-105, 108  
     effect of heat, etc., 91, 92  
     for magnesium, 35  
     for vitamins, 41, 42  
     in soup, 109-112  
     juices, 91, 225  
     Pie, 138  
     pounded, 158  
     raw, 96  
     red, 34  
     safe, 7, 74  
     Savoury Roll, 141  
     storage, 71, 76  
 Micro-organisms, 5, 7, 70-74, 97  
 Milk :  
     Almond, 226  
     Coffee, 226  
     economy of, 82  
     for calcium, 33  
     for fat, 24, 25, 93  
     for protein, 19  
     for sugar, 32  
     for vitamins, 40-43, 51  
     in fevers, 156  
     Jelly, 169  
     puddings, 119, 120  
     Punch, 226  
     Soup, 189  
     storage, 71, 76  
     Tea, 226  
     Toast, 226  
 Mineral salts, 32-37, 48, 51, 112  
 Mould, 70-74  
 Mushroom, 184, 185, 186  
 Mutton :  
     and Ham Cakes, 140  
     Broth, 158  
     choice, 84  
     cooking, 101, 103, 105  
     Cutlets with Haricots, 142  
     Haricot, 103, 139  
 Myosin, 19, 91
- N
- Nitrogen, 21, 156  
 Nitrogenous equilibrium, 21, 51  
 Nuclein, 20  
 Nursing mother, 18, 40-42, 54, 57-59, 207, 209, 210  
 Nut, 25, 42, 173  
     Cutlets, 198  
     Pudding, Chocolate, 202
- O
- Oatcakes, 181  
 Oatmeal, 28, 33, 34, 39, 75, 82, 173  
     Biscuits, 181  
     Jelly, 170  
     Pudding, 176, 179  
     Soup, 176  
 Obesity, 19, 24, 32, 183-187

## Oil :

- as fuel, 9
- olive, 23, 25, 93, 107

Oil-stoves, 12, 13

Old age, 206-209

## Omelet :

- Fish, 163
- Kidney, 194
- Savoury, 212

Omelet-pan, 106

Soufflé, 205, 220

One-pot cookery, 11, 100

Onions, 36, 82, 87, 102, 173

and Cheese, 148

Baked Spanish, 216

Orange, 42, 77, 87

and Banana Salad, 177

and Prune Jelly, 177

Flip, 228

Jelly, 169

juice, 42

Orangeade, 225

Organic acids, 16, 39, 173

Ox-tail, 103, 136

## P

Pancreas, 46

Parkin, 181

Parsnip, 78

## Pastry :

- choice, 84
- cooking, 105
- kinds, etc., 117, 118
- storage, 75, 77

Pea, 30, 34, 42

Green, and Tomato Salad, 219

Green, Cream, 218

Peas, Green, Stewed, 218

Phosphorus, 28, 33

Pickles, 75, 81

Plaice, 86

Plaice, Baked, 184, 190

Poison, 76

Polyneuritis, 41

Pork, 84, 101, 105

Port Wine Jelly, 169

Potassium, 35

## Potato :

and Leek Soup, 174

Cakes, 155

Cream, 145

for vitamins, 42, 51

Soup, 127, 174

Stew, 217

storage, 78

## Potatoes :

Bengal, 144

Derby, 144

French, 143

Hollandaise, 217

Prince's, 217

Savoury, 145, 200

with Cheese, 144

Poultry, 71, 85, 105

Protein, 18-22

absorption, 47, 48

building tissue, 18, 41, 48

digestion, 46, 47

effect of heat, etc., 89-92, 99,

104, 108

for nervous force, 19

grades, 21, 30, 50, 189

in fevers, 156

in obesity, 183

nitrogenous equilibrium, 21

ration, 50, 52

varieties, 19, 20

yielding energy, 19, 48, 55

Protein-sparers, 19, 189

carbohydrate, 26, 48

fat, 23, 48

gelatin, 22, 112

## Puddings :

- Apple and Sago Jelly, 221
  - Charlotte, 150, 201
  - Fritters, 204
  - Pudding, 149
  - Snow, 171
  - Snowballs, 151
- Apples, Buttered, 153
- Arrowroot Pudding, 171
- Baked Apple Pudding, 152
- Bakewell Pudding, 203
- Banana Pudding, 167
- Banana Mould, 178
- Barley Pudding, 220
- Bird's Nest Pudding, 149
- Bread Jelly, 170
- Caramel Pudding, 201
- Cherry Mould, 168
- Chestnut Caramel, 222
- Chestnuts and Apples, 221
- Chocolate Mould, 151
  - Nut Pudding, 202
  - Pudding, 204
  - Rice, 202
- Date Pudding, 177
- Dick's Pudding, 203
- Egg Jelly, 170
  - Junket, 171
  - Pudding, 200
- Fig Pudding, 177
- French Cherry Pudding, 201
- Fruit in Batter, 152
  - Mould, 149
  - Pudding, 200
  - Salad, 187, 221
- Golden Pudding, 178
- Gooseberry Fool, 220
  - Jelly, 186
- Invalid Fruit Tart, 205
- Isinglass Blancmange, 169
- Lemon Cream, 150

- Lemon Pie, 202
- Marmalade Pudding, 151
- Milk Jelly, 169
- Oatmeal Jelly, 170
- Oatmeal Pudding, 179
- Omelet Soufflé, 205, 220
- Orange and Banana Salad, 177
  - Jelly, 169
- Port Wine Jelly, 169
- Prune and Orange Jelly, 177
- Queen of Puddings, 153
- Rhubarb Mould, 178
- Rice and Raisin Pudding, 152
  - Soufflé, 168
- Sago Cream, 201
  - Mould, 150
- Strawberry Jelly, 170
- Swiss Cream, 204
- Treacle Pudding, 179
  - Layer Pudding, 176
- Velvet Cream, 205
- Pulses, 27, 30, 39, 173
- Purée, 111, 112
- Purgatives, 39

## Q

- Quaker :
  - Oat Biscuits, 180
  - Soup, 176
- Queen of Puddings, 153

## R

- Rabbit, 85, 101
  - Casserole, 136
  - White Stew, 140
- Raising agents, 114-119
- Raspberry, 77, 87
- Red blood, 24, 34, 35
- Rent, 60, 64, 68

## Rhubarb :

Mould, 178

Punch, 224

## Rice, 29, 33, 42

and Raisin Pudding, 152

Cakes, 154

Chocolate, 202

Cream Soup, 190

ground, 82

Savoury, 216

Soufflé, 168

starch, 29

## Rickets, 43

## Risotto, 216

## Roasting, 98, 104-106

## Roughage, 39, 47, 51

## Rye, 29

## S

## Saccharin, 184, 186

## Sago, 30, 75

Apple and Sago Jelly, 221

Cream, 201

Mould, 150

## Salad, 41, 51, 96

Egg, 148

Fish, 133, 164, 185

Fruit, 187, 221

Green Pea and Tomato, 219

Orange and Banana, 177

## Saliva, 46, 156

## Salt, 35, 36, 70-72, 107

## Sauces, 113, 114

## Savoury :

Balls, 138

Butter Beans, 199

Custard, 167

Fish, 193

Oatmeal Pudding, 176

Omelet, 212

Potatoes, 145, 200

## Rice, 216

Roll, 141, 146

## Scones, 119

## Scotch :

Broth, 128

Seed Cake, 155

## Scully, 5, 7

## Scurvy, 42

## Seeds, 41, 44, 51

## Semolina, 28, 75

Fillet, 214

Slabs, 214

## Smoke, 70, 76

## Sodium, 35

## Sole :

Creamed, 163

Steamed, 160, 184

## Soufflé :

Baked Fish, 193

Chicken, 195

Fish, 192

Lentil, 215

Omelet, 205, 220

Rice, 168

## Soup, 111, 112

## Soups, etc. :

Almond, 211

Barley Cream, 160

Bean, 128

Brown Vegetable, 212

Calf's Brain, 159

Carrot, 130

Celery, 175, 212

Chestnut, 211

Cream of Barley, 190

Cucumber, 211

Egg Broth, 159

Fish, 127, 159

Invalid, 160

Kidney, 129

Leek, 175

Lentil, 128  
 Meat Broth, 158  
 Milk, 189  
 Mutton Broth, 158  
 Oatmeal, 176  
 Palestine, 175  
 Pea, 128  
 Potato, 127, 174  
 Potato and Leek, 174  
 Quaker, 176  
 Rice Cream, 190  
 Scotch Broth, 128  
 Shin of Beef, 128  
 Tapioca Cream, 190  
 Tomato, 129  
 White Vegetable, 129  
     with Cereals, 160  
 Spaghetti, 28, 148  
 Spinach, 33, 34, 42  
     Cases, Eggs in, 186  
 Starch, 27-30  
     absorption, 47  
     beverages, 227  
     digestion, 46  
     effect of heat, etc., 94  
 State relief, 64, 68  
 Steaming, 97, 99, 100  
 Stewing, 98, 102-104, 109  
 Stock, 109-112  
 Stomach, 46  
 Storage, 70-78, 80  
 Stoves :  
     electric, 13  
     gas, 11, 12, 108  
     oil, 12, 13  
 Strawberry, 87  
     Jelly, 170  
 Suet, 41, 82, 118  
 Sugar, 30, 31  
     absorption, 47  
     choice, 82

digestion, 46  
     effect of heat, etc., 94, 95  
     food preservation, 70, 73, 77  
     in cooking, 101, 102  
 Sunlight, 14, 24, 33, 43  
 Swede, 42  
 Sweetbread, 33  
     Stewed, 166  
 Swiss :  
     Cream, 204  
     Eggs, 164, 196

## T

Tapioca, 29, 75  
     Cream, Soup, 190  
 Tea, 81, 82, 83  
     Beef, 225  
     Black Currant, 224  
     Milk, 226  
     Punch, 223  
 Thinness, 188-205  
 Thyroid, 33, 36  
 Toad-in-the-Hole, 137  
 Toast Water, 227  
     Milk, 226  
 Toffee, 25, 95  
 Tomato, 33, 34, 41, 42  
     Soup, 129  
 Tomatoes and Mushrooms, 186  
     Scrambled Eggs in, 185  
 Treacle, 95, 173  
     Layer Pudding, 176  
     Pudding, 179  
 Tuberculosis, 24, 25, 54, 188  
 Tubers, 27, 184  
 Turnips, 42, 219

## U

Unemployment, 64, 67, 68  
 Utensils, cleanliness of, 10

## V

- Veal, 85, 101, 105
  - Croquettes, 197
  - Fricassée, 195
  - Minced, 164
  - Steamed, 166
  - Stew, 165
- Vegetable :
  - Casserole, 218
  - diet, 14, 27, 35, 110, 211-222
  - Loaf, 146
  - rack, 77
  - Soup, 129, 212
  - Stew, 145
- Vegetables :
  - choice, 87
  - cooking, 101, 102, 103
  - for roughage, 39, 173
  - for vitamins, 40-42
  - green, 34, 41, 82, 87, 184
  - storage, 77, 78
- Velvet Cream, 205
- Ventilation, 5, 7, 8, 74
- Vinegar, 70, 72, 73, 115
  - Cake, 154
- Vitamins, 39-44, 48, 51, 82
  - anti-neuritic, 27, 38, 41
  - anti-rachitic, 23, 25, 43
  - anti-scorbutic, 27, 38, 42, 43, 73, 103
- Vitellin, 20

## W

- Wage-earners, 65, 66
- Wages, 65, 66
- Water, 37, 38, 51, 156, 174
- Water-glass, 76
- Water-soluble vitamins, 41, 42
- Weir Mitchell, 25, 188
- Wheat, 28, 33
- Whey :
  - Cream of Tartar, 223
  - Lemon, 224
- Whiting :
  - Baked, 184
  - Cream of, 191
  - Stewed, 130, 161
- Whole grains, 41
- Wholemeal, 34, 42, 173
  - Fruit Bread, 179
  - Gingerbread, 179

## Y

- Yeast, fermentation, 70-74
  - for vitamin B, 41, 42
  - in bread, 115-117

## Z

- Zein, 20





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